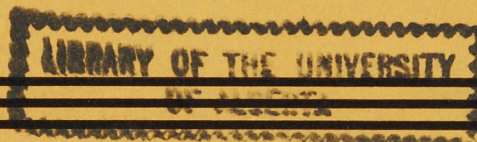
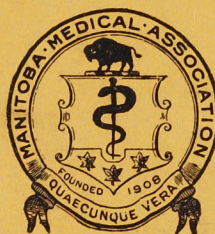


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Manitoba Medical Review



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MARCH, 1945

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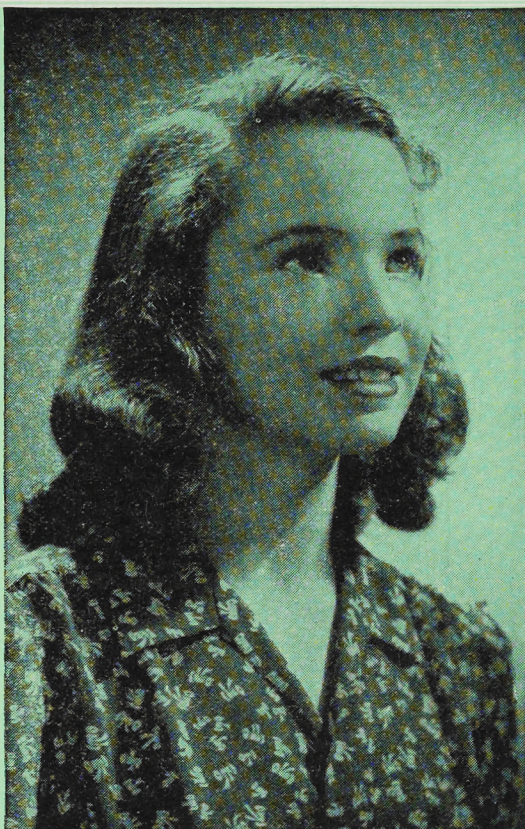
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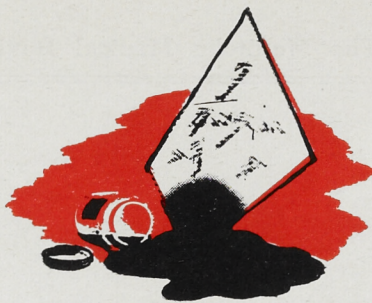
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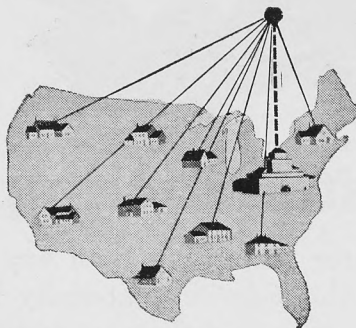
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1. Tracy Putnam: Convulsive Seizures, p. 4, J. B. Lippincott Co., 1943.

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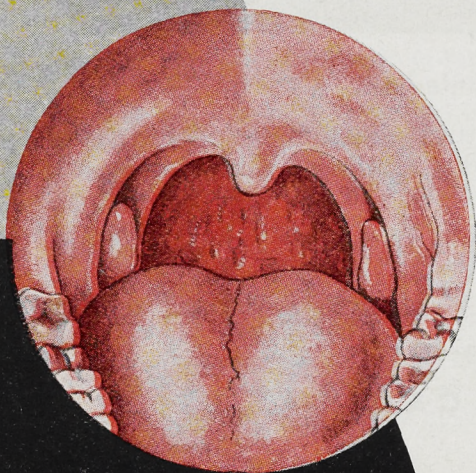
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The Medical Treatment of Hyperthyroidism

By M. Sydney Margolese, B.Sc., M.D.

It is the purpose of this paper to discuss the fundamental principles underlying the medical treatment of hyperthyroidism.

Is hyperthyroidism a disease or is it a symptom? It is a disease only when the primary cause is in the thyroid. But when hyperthyroidism is a result of some other primary disturbance, then the thyroid hyperfunction is only one expression of the fundamental disturbance. The discovery of the primary cause must precede rationale therapy.

The clue to the causation of thyroid hyperfunction can be found by considering the role of the thyroid in the endocrine system. Knowledge of endocrine inter-relationships is as yet very incomplete; nevertheless sufficient information is available to suggest the direction in which the treatment of hyperthyroidism will undoubtedly proceed.

The first step is to examine the relation of the thyroid to the other glands of internal secretion. Figure 1 is a graphic representation of the present known relationships of the thyroid to the more important ductless glands.

The thyroid secretes thyroxine as a result of stimulation by the thyrotrophic hormone of the anterior pituitary. The thyroxine so produced inhibits the production of the thyrotrophic factor and a balance is attained.¹ It will be noted that the anterior pituitary produces other trophic hormones, examples of which are the gonadotrophic and adrenocorticotrophic. Through their mediation, the thyroid may alter or be altered by any change in the function of these glands. Specifically a change in the amount of thyroxine secreted will disturb the balance between the thyroxine and the thyrotrophic hormone. Such alteration will effect anterior pituitary function, which in turn will, through the trophic hormones, increase or decrease the secretion of the glands that they stimulate. Conversely, an increase or decrease in the secretion of the gonads or the adrenal cortex will, by allowing a reciprocal change in the corres-

ponding trophic factor, affect the thyrotrophic hormone, which will influence the level of thyroxine production. Thus, in general, the gonads and adrenal cortex² exert reciprocal inhibition upon the thyroid, through the intermediary of the anterior pituitary.

This is stated to be "in general" because the resultant reaction of one gland upon another will depend upon other factors, such as the degree to which hormone production is increased or decreased, the length of time such

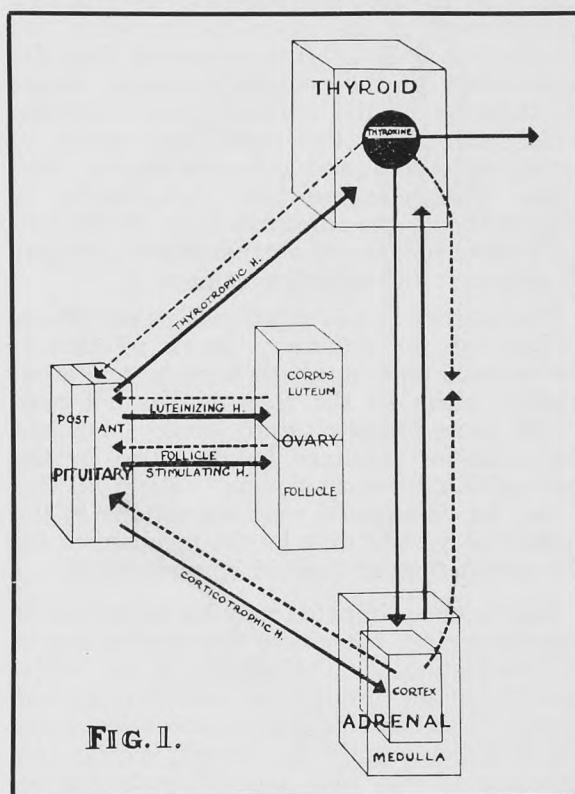


FIG. 1.

Fig. 1—The relationship of the thyroid in the endocrine system. (Solid lines represent stimulation; broken lines represent inhibition.)

changes persist, the ability of the other gland to respond, the action of one hormone upon the other in the tissues, and the end organ response. One example will be used to illustrate these factors, the relation of the thyroid to the adrenal cortex.

Since the cortical hormone and thyroxine exert antagonistic effects in the tissues³, an increase or decrease in either one necessitates

Thanks are due to Dr. D. C. Hines of Eli Lilly and Company for supplying the thiouracil; and to Mr. Angehrn of the Ciba Company for supplying the Testosterone Propionate (Perandren), used in this study.

a corresponding increase or decrease in the other. Thus, there is an increase of thyroxine necessary for the balance in hypercortico-adrenalism, and a decreased thyroxine requirement in Addison's disease. The same relationship holds for hyperthyroidism and the requirement of cortical hormone. Where either thyroid or adrenal function is increased or decreased due to an increase or decrease in the pituitary trophic factors, then this mechanism automatically assures the continued tissue balance.

But, if the disturbance of function is primary in the thyroid or cortex, then the reciprocal nature of the pituitary will be apparent, and the more severe or more prolonged the primary condition, the greater the imbalance. This relationship can be noted more simply by the fact that adrenalectomy causes hypertrophy of the other cortex, when the pituitary is intact. It is apparent that the withdrawal of the cortical hormone causes an increase in the corticotrophic hormone which stimulates the remaining cortex to hypertrophy and produces more cortical hormone. This compensatory hypertrophy is augmented by the administration of thyroid.⁴ Such mechanisms are compensatory in order to maintain an endocrine balance.

Not all the thyroid relationships are effected through the pituitary. In its relation to the adrenal medulla there is reciprocal stimulation, although the medulla has not been shown to be under pituitary control, but like the posterior pituitary is controlled by the sympathetic nervous system.⁵ From all this it can be understood why alterations in the endocrine system may be the mechanism for the production of thyroid hyperactivity.

The primary impetus may be endocrine or non-endocrine, but either the mechanism of its production, or the effects of its occurrence must act through the endocrine system. Much of this remains upon a theoretical basis, but in some cases the mechanism is clear. An example of one such possibility is the occurrence of hyperthyroidism at the menopause, which is represented diagrammatically in Figure 2. When the ovarian hormone decreases at a rapid rate, the gonadotrophic factor of the anterior pituitary will increase, but the response being non-specific, other factors as the thyrotrophic will be produced in excess. If the thyroid is capable of response, that is, is not in a state of primary hypofunction, hyperthyroidism results. This concept explains the recurrence of hyperthyroidism after thyroidectomy. The removal of a por-

tion of the thyroid does not alter the high thyrotrophic level; if the remaining thyroid tissue is capable of response, the hyperthyroidism may recur as often as these conditions are met.

Hertzler⁶ advocates total thyroidectomy as a means of avoiding recurrence. He claims that this procedure is not followed by myxedema because, in his opinion, myxedema is due to a thyroid dysfunction rather than hypofunction. His views on myxedema have yet to be confirmed, although there is no doubt that total thyroidectomy will prevent the recurrence of hyperthyroidism.

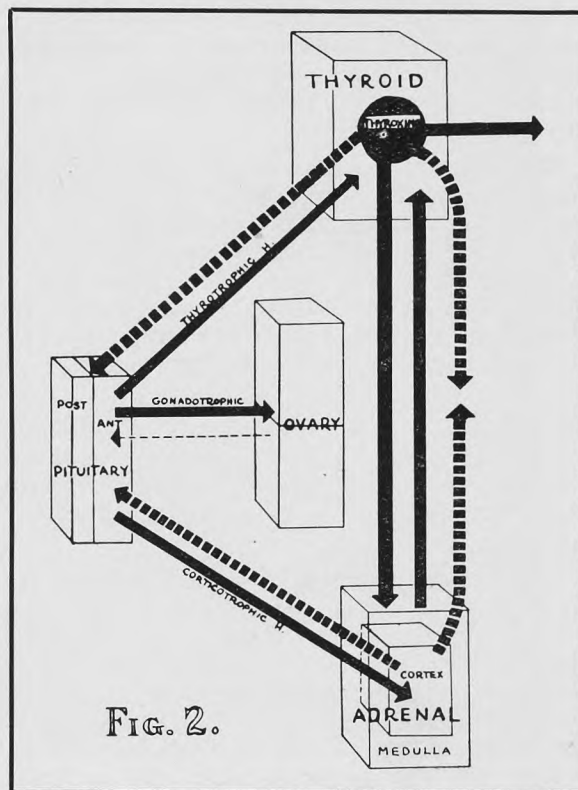


FIG. 2. — Secondary hyperthyroidism following primary ovarian hypofunction. (The increased thickness of the arrows represents increased production of the hormone so designated.)

The mechanism for the occurrence of hyperthyroidism at the menopause, undoubtedly applies to primary ovarian hypofunction at any time during the reproductive years, or may follow primary gonadal hypofunction at puberty.

Further, this mechanism explains why a beneficial effect upon hyperthyroidism is often noted during pregnancy. Firstly, there is an increased metabolic requirement met by thyroid enlargement during pregnancy, which has been demonstrated by Drs. Abbott and Prendergast.⁷ Secondly, the large amount of

estrogen produced by the placenta tends to inhibit the thyrotrophic hormone.

Secondary hyperthyroidism may be due to primary pituitary hyperfunction. In this group is the hyperthyroid state associated with giantism and acromegaly. This mechanism is obvious and is illustrated in Figure 3.

Another mechanism to be considered, rests upon more theoretical grounds, but is probably the commonest type. It is based upon the reciprocal stimulation of the thyroid and adrenal medulla. As has been mentioned, the medulla is not controlled by the anterior

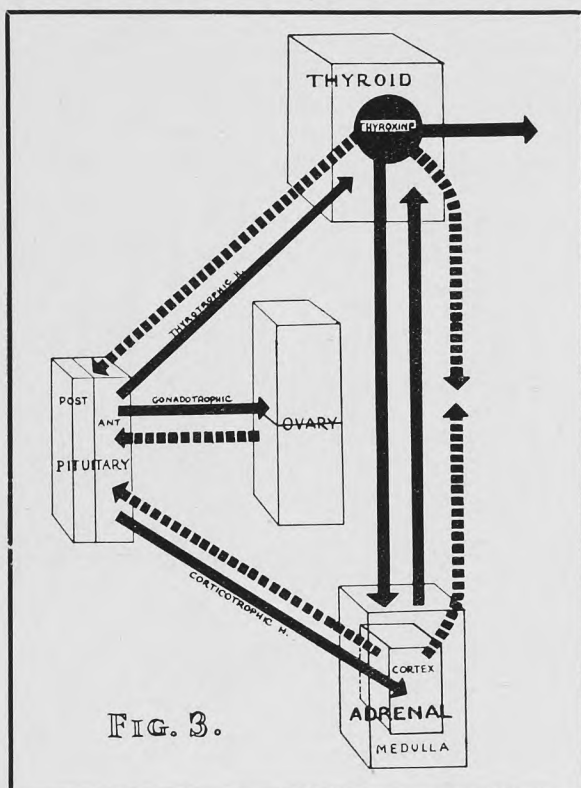


Fig. 3—Secondary hyperthyroidism following primary pituitary hyperfunction.

pituitary, but by the sympathetic centre in the hypothalamus.

When, because of any emotional disturbance, there is excessive adrenalin produced over a period of time, this will directly stimulate thyroxine production leading to secondary hyperthyroidism. It is well known that emotional factors often initiate hyperthyroidism. It is suggested that the mechanism illustrated in Figure 4 accounts for this phenomenon, and shows why, once initiated, removal of the emotional factor may not terminate the hyperthyroidism.

So far the mechanism of production of toxic goitre (Grave's disease) has been shown to be

due to a primary disturbance in some other gland. It will be realized that since thyroid activity is dependent upon thyrotrophic stimulation, a true functional hyperactivity can only be initiated outside the thyroid.

The only way in which the thyroid can independently increase its output is for new secretory cells to be formed. Thus, toxic adenomas, tumours with functional activity, constitute the only true hyperthyroidism; until such time as the cause of neoplasms is discovered. The endocrine status will be identical with secondary hyperthyroidism due

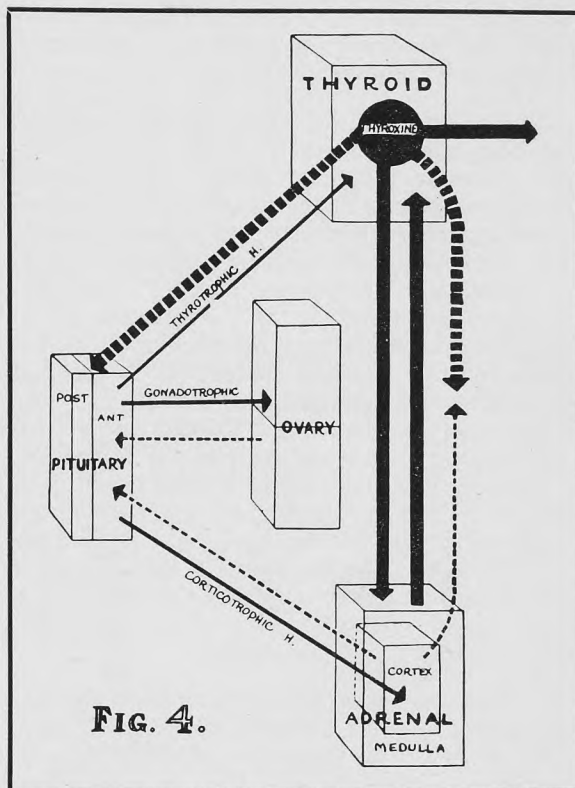


Fig. 4—The endocrine status when hyperthyroidism either follows primary hyperfunction of the adrenal medulla, or is primary in the thyroid. Since each stimulates the other, the end result will be the same if either is increased. The differentiation is important since in one case the problem is surgical (primary toxic nodular goitre) and in the other is endocrine and psychiatric (primary adrenal medulla hyperfunction).

to adrenal stimulation, as represented in Figure 4, except that the initial stimulus comes from the thyroid.

Diagnosis.

The diagnosis of hyperthyroidism is beyond the scope of this paper. Actually, such a diagnosis only indicates the phenomenon of thyroid hyperfunction, without stating the origin of this disturbance. A true diagnosis determines whether the disorder is a fundamental thyroid disturbance, or a secondary

thyroid disturbance due to altered function of another gland. In attempting such a fundamental diagnosis, many difficulties will be at once apparent, and it must be conceded that in many cases it will not be attained. Failure to do so only emphasizes the tremendous need for quantitative hormone assay.

Assuming that the hyperthyroid state has been established, what means are now available to determine the primary cause? It must first be decided if the goitre that is hyperfunctioning presents signs of an adenoma. If so, then it is probable that this is a primary hyperthyroidism for which surgery is indicated, and for which medical treatment can, at best, only be considered an adjunct.

Where there is no evidence of an adenoma, or where the goitre is typically Grave's disease, then an attempt should be made to determine the site of the primary disturbance. A history of hyperthyroid symptoms, beginning coincidentally with menopausal signs, or climacteric symptoms, should cause the gonads to be suspected as the initiating factor. The diagnosis may be confirmed objectively by the vaginal smear. The method of staining and interpretation has been worked out by Papanicolaou.⁸ During the reproductive years a history of menstrual change, in women, or a decrease in sexual potency in men, preceding hyperthyroidism, should cause suspicion that a lowered gonadal output may be responsible. In the female, the diagnosis may be confirmed by a vaginal smear series, which usually shows a diminished estrogen activity throughout the cycle.

Physical examination will demonstrate factors which suggest anterior pituitary hyperfunction as the primary cause of the hyperthyroidism. Acromegaly has its own diagnostic features and X-ray of the sella-turcica may reveal pituitary tumours. These conditions are of course uncommon. But it is less uncommon with hyperthyroidism occurring at puberty to observe growth continuing without the usual signs of sexual development. It will be recalled that the upper measurement greatly exceeds the lower, at birth, and that the growth hormone produced by the anterior pituitary acts to a greater extent on the long bones, so that by the time maturity is reached, the upper and lower measurements are equal. Normally, the gonadotrophic factor appears at the time of puberty and acting upon the gonads, cause the production of estrogen and androgen in the female and male, respectively. As has already been

shown, the gonadal hormones inhibit pituitary function, and so decrease the production of growth hormone. At the same time, the gonadal hormone causes epiphyseal closure. Thus, growth ceases with the advent of sexual maturity. If the gonads fail to respond adequately to the introduction of gonadotrophic hormone, then two things occur. Firstly, there is no inhibition of growth hormone, and secondly, there is a failure of epiphyseal closure. Under these conditions, growth of the long bones continues, and so the hypogonad figure is produced, in which the lower measurement greatly exceeds the upper, or the span exceeds the height. The mechanism is shown in Figure 5, and examples of early and late sexual maturation are shown in Figure 6. Delay in epiphyseal closure can be determined by an X-ray of the hand. Hyperthyroidism occurring under these conditions

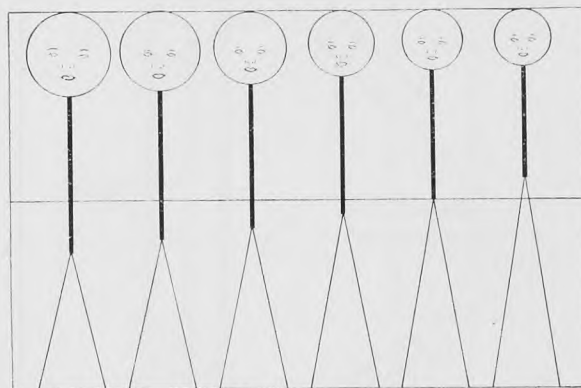


FIG. 5.

Fig. 5—The normal proportions of the upper and lower measurements from birth to maturity showing that growth of the long bones proceeds at a greater rate than growth of the flat bones; at maturity the lower measurement equals the upper. If growth continues beyond the time at which maturation normally occurs, the lower measurement will exceed the upper; the result is the hypogonad figure.

is obviously due to the primary gonadal insufficiency allowing increased thyrotrophic hormone production.

Hyperthyroidism due to adrenal medullary hyperfunction, presents the greatest difficulty for accurate diagnosis. Because of the lack of diagnostic criteria, it can only be suspected when hyperthyroidism shows no signs of an adenoma, no signs of pituitary hyperfunction, or signs or symptoms of gonadal hypofunction. The absence of these factors with a history of emotional disturbance, initiating the hyperthyroidism, may be considered as due to excessive adrenalin stimulation.

Mechanism of Treatment

From an understanding of the mechanism of the production of hyperthyroidism, rational

treatment is aimed at the restoration of a normal endocrine balance. Where hyperthyroidism follows primary ovarian failure, the principle of treatment will be the reversal of the compensatory pituitary hyperactivity, by the administration of the hormone of the underfunctioning gland, as is demonstrated in Figure 7. The removal of this pituitary overproduction eliminates the cause of the thyroid hyperactivity. For example, during the menopause the replacement of the ovarian hormone to its former level, and gradual withdrawal over a long period of time to a

ing two such cases,⁹ the hyperthyroidism can only be controlled by a large maintenance dose. This is to be expected when it is considered that the causative factor is still in operation.

When adrenal medullary hyperfunction causes hyperthyroidism, a vicious circle is established, which may continue even though the initial emotional disturbance has been removed. For this condition other than endocrine means must be found for medical treatment. The discovery of thiouracil provides such a means, and this mechanism can now

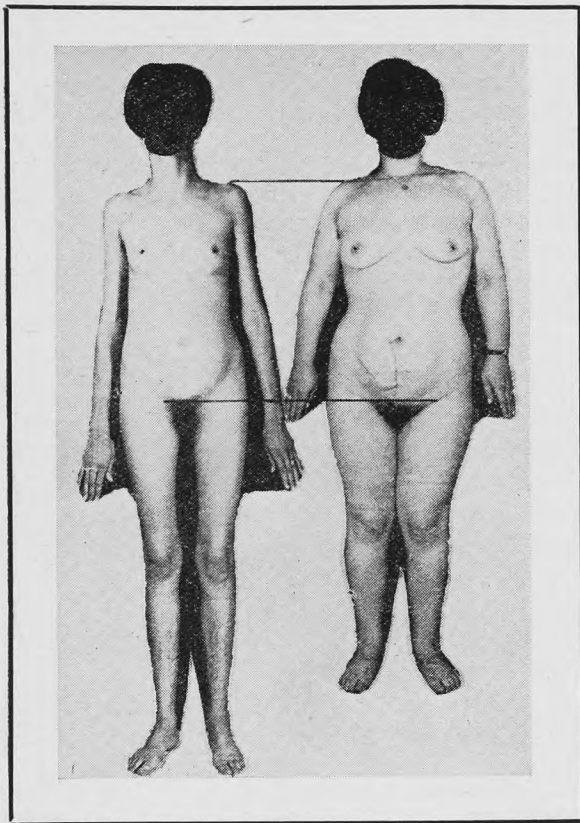


Fig. 6—Examples of the result of late (Left) and early (Right) epiphyseal closure due to early and late introduction respectively of sex hormones. Note the difference in secondary sex characteristics. Hyperthyroidism in the first case would be due to primary hypo-ovarianism; in the second case to primary hyperpituitarism.

post-menopausal value, lowers the output of the thyrotrophic hormone and decreases the thyroxine output to normal.

Where hyperthyroidism follows primary pituitary hyperfunction, this same principle may be utilized, although there is no primary gonadal insufficiency. Nevertheless, large doses of gonadal hormone have been shown to inhibit the thyrotrophic hormone. Further, thiouracil is unsatisfactory in this type of case, because as Astwood has shown in report-

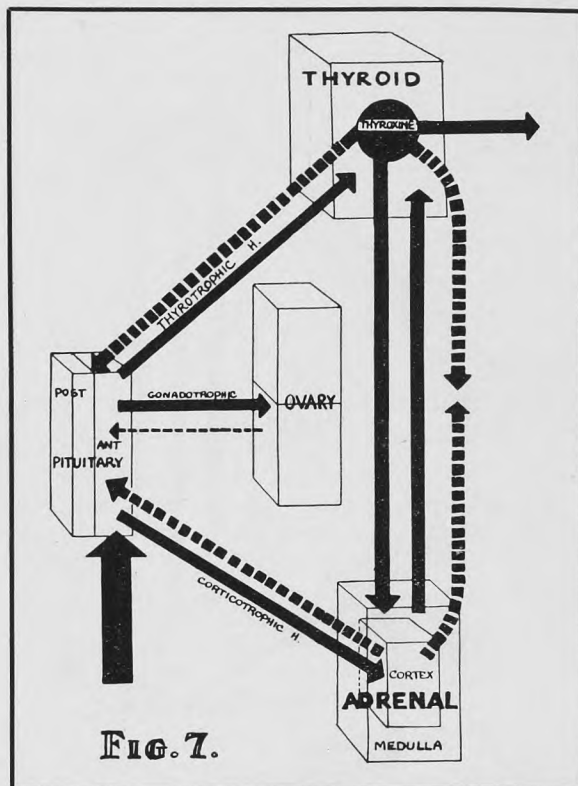


FIG. 7.

Fig. 7—The principle of Endocrine treatment. The large arrow represents the administration of the hormone of the underfunctioning gland which inhibits the production of the pituitary trophic factors.

be considered. It has been shown that thiouracil inhibits the production of thyroxine by preventing the iodination of thyroglobulin, with the production of a physiologically inert incretion.¹⁰ This action occurs in the hypophysectomised animal and so is independent of the pituitary. This action occurs directly in the thyroid and prevents the formation of new thyroxine. (Figure 8.) This inhibition does not apply to thyroxine that already has been formed. Thus, when iodine has been given previously, thiouracil will be apparently without effect until the preformed thyroxine has been metabolized. Conversely, after

thiouracil treatment, iodine can not be taken up in the usual manner.¹¹

The other action of thiouracil, in common with thiourea and the sulfonamides, is to cause hypertrophy and hyperplasia of the thyroid.¹⁰ This action does not occur in the hypophysectomised animal, and therefore takes place through the intermediary of the pituitary. This is a compensatory mechanism as is shown by the increase in the basophil cells of the anterior pituitary, the same cells as are increased after thyroidectomy. The reduction in thyroxine causes an increase in

the treatment of hyperthyroidism.^{12, 13, 14, 15, 16} When the hyperthyroidism has been due to a primary ovarian deficiency, and when dosage has been adequate, the results have been very favorable. These investigators conservatively conclude that estrogen therapy for hyperthyroidism is satisfactory as a pre- and post-operative measure, and for the treatment of menopausal hyperthyroidism.

To exemplify the results that may be obtained with endocrine therapy, two cases are briefly outlined here: a female treated with estrogen, and a male treated with androgen.

Case No. 1

Female. Age 30. Treated with estradiol dipropionate intramuscularly. The primary cause was suggested by the change in menstruation. This was verified by vaginal smear studies that showed an estrogen deficiency.

	March, 1943	March, 1944
Symptoms	Nervousness Palpitation Headache Nausea	None
Menses	Hypomenorrhea	Normal
B.P.	145/75	130/80
Pulse	120	80
Temp.	99.1	97.7
Weight	128	137

Case No. 2

Male. Age 43. Treated with testosterone propionate intramuscularly.

	July, 1942	April, 1943
Symptoms	Nervousness Palpitation Loss of Weight	None
BMR	+52%	+3%
B.P.	150/90	120/80
Pulse	108	65
Temp.	99.1	98.0
Weight	148	172

Thiouracil Treatment

Thiouracil is administered in the form of oral tablets of 0.1 or 0.2 grams. Since thiouracil is excreted rapidly it is best to administer the total dosage in small divided amounts. The usual practise is to give 0.1 gms. six times daily for two weeks, and then to gradually reduce the dosage as indicated by metabolic determinations until the metabolism is within normal limits. Dosage is then reduced to a maintenance level, which is 0.1 to 0.3 gms.

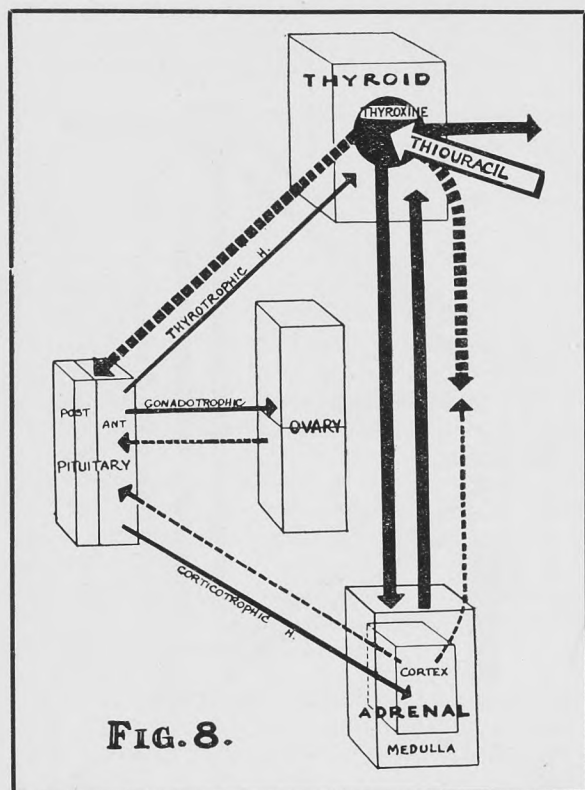


FIG. 8.

Fig. 8 — The principle of Thiouracil treatment showing that the action of thiouracil is in the thyroid, interfering with the production of thyroxine.

the thyrotrophic hormone, which causes the thyroid to enlarge without allowing increased thyroxine production. Such an enlargement, without a corresponding increase in function, is similar to the production of a colloid goitre. However, this goitrogenic effect will only occur when thyroxine production is greatly reduced. Such reduction does not occur with the usual dosage level required in treatment, and so this effect is rarely observed.

Endocrine Treatment

A review of the literature shows that a number of investigators have used estrogen in

daily, and which may have to be continued for a number of months. The question of remission after cessation of treatment has as yet to be fully answered, but some cases have remained symptom free for a variable time after the drug has been discontinued.

The chief disadvantage of thiouracil is its toxic manifestations. These include digestive disturbances, urticaria, fever, anemia, leukopenia, and most important, agranulocytosis. In a few cases this last condition has caused the death of the patient, for despite discontinuing the drug the white cell changes continue irreversibly. Cantor states that the administration of Vitamin B6 cures agranulocytosis¹⁷; nevertheless, the possibility of this fatal reaction must temper the enthusiasm without which it would otherwise be received. Certainly no patient should be allowed to continue thiouracil without being under close observation. These manifestations may be toxic or may be allergic. Astwood states that all major reactions occur early, and that there is no evidence of chronic toxicity.¹⁸ McGavack has found minor reactions occurring as late as the fifth month of treatment.¹⁹ It is to be hoped that active preparations with less toxicity will be found. Astwood has reported a compound which may fulfil these requirements, thiobarbital.²⁰ An example of the results achieved with thiouracil therapy is briefly outlined.

Case No. 3

	Female. Age 18. Treated with thiouracil.	
	Oct., 1944	Jan., 1945
Symptoms	Nervousness Tiredness Headaches	None
BMR	+23%	-15%
B.P.	150/100	120/85
Pulse	104	78
Temp.	98.9	97.7
Weight	140	136

In conclusion, it will be apparent from the rather superficial discussion, that the concept of endocrine imbalances as the origin of many physiological disturbances will become a very powerful tool in diagnosis and treatment, when methods for the quantitative assay of

the internal secretions become available, as they undoubtedly will in the future. It will also be apparent that even today, in the light of partial knowledge, much can be done with these concepts to rectify these physiological deviations.

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Medical Events for March

Hospital Luncheons

Thur., 1st, 12:30, Winnipeg General Hospital.
Tues., 6th, 12:30, Grace Hospital.
Tues., 6th, 12:30, Misericordia Hospital.
Thur., 8th, 12:30, St. Boniface Hospital.
Thur., 15th, 12:30, Winnipeg General Hospital.
Thur., 22nd, 12:30, St. Boniface Hospital.
Friday, 23rd, Victoria Hospital.
Tues., 27th, 12:30, St. Joseph's Hospital.

Tumour Clinics

Winnipeg General Hospital, every Wednesday at 9:00 a.m.

St. Boniface Hospital, every Friday at 10 a.m.

Winnipeg Medical Society

Friday, 16th, 8:15 p.m., Medical College.

Scabies

By Arthur R. Birt, M.D.

Scabies is an infectious disease caused by the invasion of the cuticle of man by the mite, *Sarcoptes scabiei* de G. var *hominis*. It is characterized by intra-epithelial burrows made by the female for the purpose of depositing ova, by intense itching and by multiform lesions which develop as a result of scratching. The disease is commonly called "the itch", or "the seven years' itch".

The history of scabies is most interesting. It is generally agreed that disease is as old as man himself, and that scabies has existed at least since Biblical times. And yet, in 1937 Friedman¹ wrote, "it was not until 250 years ago that, for the first time in history, the etiology of anyone of the diseases known to man was discovered. That disease was scabies and the 'medicine man' who discovered it was Giovan Cosimo Bonomo." This epic discovery was reported in 1687 from Leghorn in Italy, by Bonomo and his pharmacist and naturalist friend, Cestoni. And thus, according to Friedman, "did Bonomo in 1687 successfully sow the first seed in the history of medicine of the theory of specificity or fixed etiology, in disease." This occurred in the seventeenth century when the Paris Faculty of Medicine dominated medical thought and teaching in Europe; the faculty of medicine that had decreed that anyone who deviated from the teachings of the Humoral Theory of Pathology inherited from Hippocrates (460-370 B.C.) and Galen (130-200 A.D.), would do so upon the pain of excommunication. Thus, it is small wonder that the work of Bonomo received scant attention and soon was forgotten. It was not until a century and a half later, in 1834, that Simon François Renucci, a young Corsican medical student studying in Paris, demonstrated again that scabies was caused by the itch mite.

Another point of historical interest is the suggestion made by many that the "emperor's itch" was scabies. The figure of Napoleon standing erect with the fingers of his right hand inside his coat and his left arm behind his back is classical. It is thought by some that the emperor assumed the position to scratch his itchy chest. Friedman² suggests that it is more likely that Napoleon suffered with dermatitis herpetiformis.

The incidence of scabies is difficult to assess. According to Goodman's³ statistics of the ten most common skin diseases, based

on an analysis of nearly one million published cases of all age groups, scabies has an incidence of 4.8 percent. In a previous paper⁴ it was shown that the incidence of scabies in the Skin Clinic of the Children's Hospital of Winnipeg for the nine years ending in 1941, was 16 percent. By 1943 the rate had risen to 22.5 percent, and in the first ten months of 1944 had reached a peak of 28.3 percent. The increase in the number of cases treated is even greater than the percentage increase would indicate, because more patients have attended the clinic. In 1943, 74 patients with scabies were treated. In the first ten months of 1944, 164 patients with scabies have been treated. This is more than double the number of the previous year, and constitutes a serious public health problem. The rapid increase in scabies is not a local condition. Scabies is almost pandemic in many countries engaged at war. In England the Ministry of Health has found it necessary to appoint an Advisory Committee on Scabies; the very new and interesting work of Melanby⁵ elucidates clearly many of their problems.

As previously mentioned, scabies is caused by the itch mite, *sarcoptes scabiei*. A description of its appearance and its eight legs has no clinical importance. With good eyes the female can just be distinguished as a minute white granule. The male is only about half the size and is harder to find. The pathognomonic lesion of scabies is the burrow. Typically it appears as a slightly elevated greyish or tortuous line in the skin with a small vesicle at the open end. The mite is sometimes seen as a white or gray dot at the closed end. The burrows are always found in the normal lines of the skin. They involve chiefly the dorsal surface of the interdigital webs of the fingers, the wrists, the axillae, the lower abdomen and umbilicus, and the buttocks. The nipples in the female and the genitalia in the male are commonly affected. For all practical purposes scabies does not occur above the neck. While the burrow is the pathognomonic lesion of scabies, it is often destroyed early by scratching and secondary infection. Then the clinical picture becomes multiform with erythema, papules, papulovesicles, pustules, crusts and scales in the classic areas involved by the *sarcoptes*. This type of eruption with an associated history of itchiness, which is worse at night, should suggest the diagnosis of scabies. If, in addi-

tion, there is more than one case in the household, the diagnosis is almost certain. In infants the eruption is often characterized by deep-set, tense vesicles on the palms and soles.

Recently Mellanby⁵ has suggested that the itchiness in scabies is not due to the active movements caused by the burrowing mite, but rather that a true sensitization occurs. He has demonstrated that it is possible to have mites burrowing in the skin for a month or longer without causing any sensation. Then erythematous rings appear around the burrows, and itching starts. This theory is most important in the epidemiology of the disease. The long latent period between infection and the onset of symptoms creates a serious problem in the control of the condition. The theory of sensitization in scabies, accounts for the itchiness that persists in the absence of lesions, for varying periods of time after treatment; it also accounts for the persistent, deep-set vesicles on the palms and soles of infants.

The methods and ease of transmission of scabies have long been a subject of controversy. Scabies is essentially a domestic disease. The commonest mode of infection is sleeping with some one who has the condition. It is also spread readily by children at play. According to Mellanby the female sarcoptes can move about one inch in a minute on warm skin, whilst at temperatures up to 68° F., the animal makes practically no movement at all. Thus, ordinarily, to transmit the infection it is necessary to have contact of warm body surfaces for prolonged periods of time. Fomites are not a common method of transmission of scabies. Disinfection of underclothes and bedding by laundering is usually accepted as being good practice. However, in England in the present emergency the Advisory Committee on Scabies of the Ministry of Health have recommended that the disinfestation of clothing and blankets of scabies patients may reasonably be dispensed with.

Errors in the diagnosis of scabies are usually due to failure to suspect the infection. The presence of widespread impetigo, ecthyma, pustules or furuncles on the body should suggest the possibility, and the lesions should be closely scrutinized to see if they involve the typical sites of sarcoptes infection and to discover any associated burrows. One-fifth of the patients with scabies treated at the Children's Hospital during the past year have had concomitant secondary infections. Con-

ditions commonly confused with scabies are pediculosis corporis, papular urticaria in children, and dermatitis herpetiformis. In pediculosis corporis the hands and feet are unaffected and the trunk is usually covered with long scratch marks. The parasite or its ova can often be found in the seams of the underclothing. Papular urticaria in children is difficult to differentiate from scabies. The eruption is mostly confined to the lower limbs, the buttocks and forearms, and no burrows can be found. It is not infectious and tends to recur after fairly long free intervals. Dermatitis herpetiformis is commonly diagnosed and treated as scabies. Dermatitis herpetiformis is characterized by erythematous, papular, vesicular and bullous lesions which tend to appear in symmetric groups. The lesions are intensely itchy and are followed by scarring and pigmentation. The interdigital spaces, the umbilicus and the genitalia are not affected; there are no burrows and no other cases in the household.

The ideal method of treating scabies has yet to be devised. Its object is to kill all stages of sarcoptes as rapidly as possible, with a minimum amount of discomfort and inconvenience to the patient, and to do it at a reasonable cost. Mellanby assesses the value of any treatment by examining the patients twenty-four hours after one application of the medicament. The sarcoptes are removed by skilled personnel and are examined to discover the proportion which have been killed. Based on these findings, he grades the efficiency of different methods of treatment. Major S. A. Boyd, who had an opportunity, while overseas, to observe Mellanby's work on soldiers, says that as far as he knows there was no subsequent follow-up of cases. Our experience, as will be shown later, agrees with that of Percival⁶, in that a case can only be regarded as cured if repeated examinations over a period of three or four weeks are negative.

The two drugs most commonly employed in the treatment of scabies at the present time are sulphur and benzyl benzoate. Sulphur ointment is the oldest remedy for scabies, and Mellanby rates its efficiency at nearly one hundred percent. It is used in strengths varying from five to ten percent. The patient has a bath and then applies the ointment night and morning for three days without changing underclothes or bedding. On the fourth day another bath is taken and fresh clothing and bedding are provided. This method is efficient, but it is slow, has an unpleasant odor and often produces a dermatitis.

The twenty-four hour treatment recommended by Lomholt⁷ is, in our opinion, the surest method of curing scabies. Mellanby rates its efficiency at one hundred percent. The ointment contains polysulphides and is now listed in the Canadian Formulary as Danish Ointment. Attention must be paid to details of the treatment. The patient receives a cleansing bath with soap and water, using a brush to go over the burrows. Then the ointment is applied to the whole body from the neck down. Tight-fitting underwear that extends to the ankles and wrists is put on, with socks on the feet and gloves on the hands. Then the patient goes to bed for twenty-four hours. The ointment is only applied once, and is followed by a cleansing bath.

The use of benzyl benzoate in the treatment of scabies was popularized in 1937 by Kisse-meyer⁸. It is the active principle of Balsam of Peru, and is usually prescribed as an emulsion. The original mixture contained equal parts of benzyl benzoate, isopropyl alcohol and soft soap. More recently aqueous preparations have been made containing twenty to thirty percent benzyl benzoate, by using an emulsifying agent such as triethanolamine or methyl cellulose. Several methods of application are advised. The commonest procedure is to have the patient bathe in soap and water and then, while still wet, to have the lotion painted on the body from the neck down. The application is allowed to dry for five minutes and then is repeated. When dry, the patient can put his clothes on and requires no further treatment for twenty-four hours, when another bath is taken. One treatment is usually regarded as being sufficient. Mellanby says a twenty percent emulsion of benzyl benzoate in water is nearly one hundred percent efficient in the treatment of scabies, and, based on his work the British Ministry of Health recommends it as the treatment of choice. It has the distinct advantages of not being messy or odorous, not necessitating loss of time in bed, and not requiring fat for its preparation. However, in our experience, it has certain disadvantages. Most children complain bitterly of the burning sensation produced by its application. Sometimes it is transitory, but often lasts for several hours. This occurs most often with the soft soap and isopropyl alcohol base, and must be considered when treating children. The production of varying degrees of dermatitis is also fairly frequent with benzyl benzoate. The chief objection, in our clinic, was the increase in recurrence rate. In the

out-patient department of the Children's Hospital, one child out of every eight treated with Danish ointment returns after a month or six weeks, either because he has become reinfected, or because the treatment did not cure his condition. With benzyl benzoate emulsion the rate rose to one in five. This increase in recurrence rate occurred both with the alcohol and soap base, and also with an aqueous base containing methyl cellulose. Recently, following the suggestion of Goldman⁹, the drug has been incorporated in a light cream. It is hoped by this method to get better penetration and prevent relapses. At present, the application gives promise of being most satisfactory, but it is too early to pass final judgment on it. In the treatment of scabies it is important to remember that the object is to kill all stages of the sarcoptes. This does not immediately remove all skin lesions and it is often necessary to prescribe some local antipruritic remedy until the skin returns to normal. In the presence of secondary coccal infections, it is essential to treat the scabies as early as possible. If the infection is mild the scabies may be treated at once; if it is severe and widespread, then a few baths with potassium permanganate (1:4,000) will control the infection and permit treatment to eradicate the underlying sarcoptes.

At the present time scabies is a serious public health problem. We, as physicians, can do much to control it. An increase in the accuracy of diagnosis is necessary. Mellanby says that army medical officers, and physicians in civilian practice in England, generally make at least a twenty-five percent error in their diagnosis of scabies. It is important that everyone with an itchy eruption, particularly if the itching is nocturnal in character, be examined for burrows or multiform lesions in the typical areas involved by sarcoptes infection, and questioned regarding contacts. It is even more important that all widespread coccal infections be examined to ascertain if there is an underlying scabietic infection. A prime consideration in the control of scabies must be a search for, and the treatment of, all contacts. There is no use treating two or three children in a home and not examining, and when necessary treating, other members of the same household. The use of public health nurses to trace contacts could be most valuable. Unfortunately, at present, we have no authority to examine or treat suspected adults, unless they are willing to co-operate. It would also seem desirable to have some centrally located hospital

beds made available for the treatment of scabies. Too often, incomplete or misunderstood instructions account for failures in treatment; or a mother, living in a home without adequate facilities, is expected to perform the miracle of bathing and treating six or eight children, and then disinfecting all the clothes and bedding. Under observation in an institution, baths and treatment could be correctly given and clothing disinfected. An opportunity would also be afforded to study scientifically, and appraise accurately, new and old methods of treatment. A last, and most important aid in the control of scabies, would be a reduction in the congestion in

our cities and towns by an improvement in social and housing conditions.

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The Proceedings at a Tumour Clinic

St. Boniface Hospital, January 14th, 1945, 10:00 a.m.

Dr. Digby Wheeler, Chairman

Case I

Presented by Dr. A. T. Gowron

Mrs. P. Age 55. Patient referred to the tumour clinic by Doctor Gendreau and admitted to staff under Doctor Gowron.

H.P.T.—The patient noticed a small lump in her left breast six months ago. This has become progressively larger. She complains of a needle-like pain in this breast and a similar pain in the back, extending from the lower thoracic area into the lumbar. There has been a loss of weight—eleven pounds in the last two weeks; fifty pounds in the last two years. The patient has not been feeling well for some time, but has managed to carry on with her housework.

Doctor Wheeler: Dr. Gowron, this patient presents herself because of the lump in her breast and because of the pain in her back?

Doctor Gowron: Yes.

Doctor Wheeler: This patient is a well-nourished female, in her fifth decade. There is a mass in her left breast, in the upper outer quadrant, about the size of a small orange. This is slightly nodular. It is fixed to the skin because there is a dimpling over the mass. It is not fixed to the deep tissues. There are no glands either in the axilla or in the supraclavicular area. This is your case, Dr. Gowron. What do you think this case is?

Doctor Gowron: She has a scirrhus carcinoma.

Doctor Wheeler: Why do you think that?

Doctor Gowron: Because of the size of the tumour, the hardness of it, and because it is well defined.

Doctor Wheeler: It is still growing?

Doctor Gowron: That is hard to say. We cannot get any information from her in order to determine this.

Doctor Wheeler: It has apparently been there for six months; presumably, it was there before that. We have now to decide the proper handling of this case.

Doctor Gowron: I believe it necessary that we determine the cause of the pain in her back, and for that reason I have asked for her spine to be radiographed, and also for a radiograph of her chest.

Doctor Wheeler: I fully appreciate that you are anxious about the pain in her back. Having in mind the possibility of metastases in her spine, I have here the spine films for you to see. I ask Doctor Miles if he sees anything here to suggest metastatic involvement and, if there is metastatic involvement, what one would expect to see.

Doctor Miles: If there are metastases I would expect an area of washed-out bone, or some degree of collapse of a body. I do not see anything to suggest this.

Doctor Wheeler: I agree with Doctor Miles, that there is no positive evidence here from an X-ray standpoint that this patient has any metastases of the spine. I would point out that it is possible to have metastases of the spine that do not show on an X-ray film. During the time that the X-ray is negative, the patient may be having pain from undis-

closed involvement of the spine. What do you think regarding this, Doctor Miles?

Doctor Miles: I think that is quite possible.

Doctor Wheeler: Subsequent films may show the area of metastatic involvement. The appearances of radiological changes may be late and may post-date the pain. I wish to emphasize that the absence of positive X-ray changes does not mean that she has not early metastases. If this patient continues to complain of pain during the time she is under observation, subsequent films should be made. Doctor Gowron thinks this patient has scirrhus carcinoma.

Doctor Burrell: Yes.

Doctor Wheeler: The X-ray of the chest does not show any evidence of metastases. Dr. Gowron, in the absence of positive evidence of metastases in the spine, what do you suggest as a proper treatment procedure? Are you going to assume that this patient has not any metastases, that the pain in the spine is from another cause, and treat this breast as you would treat any other carcinoma of the breast?

Doctor Gowron: I still think she has a good chance of having metastases of the spine in spite of the negative X-ray findings. I say this because she complains of pain.

Doctor Wheeler: Well, other people have pains in their backs. She is a very fat woman.

Doctor Gowron: She has never complained of pain before.

Doctor Wheeler: Couldn't the pain be due to arthritis or lumbago?

Doctor Gowron: I still insist that this patient has metastases of the spine.

Doctor Wheeler: Doctor Gowron, holding that view, do you propose to do a radical amputation of the breast?

Doctor Gowron: If she has metastases, a radical would not help.

Doctor Wheeler: I agree with you. Metastases are not fully established in this case and, to my mind, are open to very definite doubt. My examination of this patient discloses the mass in the breast. I admit that this is a good size, but I did not feel any glandular involvement. I may be wrong in this. Have you felt any glands, Doctor Gowron?

Doctor Gowron: No.

Doctor Wheeler: It would seem to me that you would be justified in doing an operative

procedure on this breast, hoping that she has not any metastases in her spine.

Doctor Burrell: This woman has a very large scirrhus carcinoma. This makes it theoretically inoperable. Practically, it is operable. Doctor Furman felt a gland in the axilla and if, in the presence of this, she is cured, it will be a miracle.

Doctor Wheeler: I think this patient should be given the benefit of the doubt and a radical operation done.

Doctor Miles: No mention has been made of this patient's family history, which I think is significant. The patient's mother died at seventy-seven of carcinoma of the face. Her father died at seventy-seven of carcinoma of the bowel. One brother was operated on for carcinoma of the cheek. He is still alive, but it has recurred.

Doctor Wheeler: It is evident from this family history that there is a definite familial diathesis for carcinoma. Are there any further comments on this case?

In the absence of any further comments, it is then the opinion of this clinic to suggest to the attending surgeon that a radical amputation be performed and that this patient be kept under observation to determine if metastases in the spine become demonstrable.

This patient was discharged from the hospital and returned to Saskatchewan as a patient under the Saskatchewan Cancer Commission. No further information is available.

Case II

Presented by Dr. Gowron

Mrs. A. Age 35. Staff patient under Dr. Gowron.

H.P.I.—This patient has noticed a lump in the breast for the last nine months. During that time she states that it has not increased any in size. The patient has had three children. The youngest one is now five years of age. There is no history of any injury to the breast. There is nothing else pertinent in the personal or family history.

Doctor Wheeler: This patient presents a mass in the left breast immediately behind the nipple. This is about the size of a hen's egg. The mass feels quite hard. It is fixed to the deeper tissues and there is a definite retraction of the nipple. Are there any glands present, Doctor Gowron, and what do you think of this patient?

Doctor Gowron: I have not felt any glands and I believe she has duct carcinoma.

Doctor Wheeler: Why do you think that? To me, it feels just the same as the last case we saw.

Doctor Gowron: The mass is immediately behind the area of the nipple. Because it is situated in this position, and so close to the nipple, it could easily arise from the ducts.

Doctor Wheeler: You are basing your opinion entirely on position, and this leads you to believe that this is a duct carcinoma. Doctor Burrell, do you agree with Doctor Gowron?

Doctor Burrell: No; I think this is a scirrhus carcinoma.

Doctor Wheeler: Why do you think that?

Doctor Burrell: I believe that it is not a duct carcinoma because there has been no bleeding or discharge, and one would expect either of these two conditions to have occurred where a mass of this size is present. It is an unusual site for a scirrhus carcinoma, but nevertheless this site does not necessarily indicate a duct carcinoma, and even if a scirrhus carcinoma were present in this location one could expect a discharge from the nipple.

Doctor Wheeler: We have now two opinions—one, that this is a duct carcinoma and, another, that this is a scirrhus. This patient is on staff and we have to make a recommendation to the attending surgeon.

Doctor Gowron: This patient does not want her breast off. In this she has her mind fully made up, and the internes and I have been unable to change it.

Doctor Wheeler: You have no alternative, then, but to inform her that she is acting contrary to her best interests.

Doctor Gowron: Yes, I have told her that, but I shall try again and the opinion of this group may help.

Doctor Wheeler: Our opinion is definitely that she should have a radical amputation of the breast.

(Dr. Gowron again urged her, this time more successfully, to reconsider her decision, and operation was performed on January 25th.)

Operative Report: A scirrhus carcinoma was found lying behind the nipple. A radical resection was done. No glands were found.

Pathological Report: "Small walnut-sized firm mass at the very base of the nipple which is fused; contour of mass is indefinite and irregular. There are some bean-sized nodes in the axillary fat, not unduly firm; most of them consist of a fatty core surrounded by a relatively narrow rim of lymphoid tissue."

Microscopical Report: Four axillary nodes were examined and all were found free of neoplasia. Mass in breast is a duct adenocarcinoma. It is a little too cellular to be called scirrhus.

Case III

Presented by Dr. J. C. Hossack

Mr. E. Age 27.

Dr. Hossack: This patient was referred to me from the country about three weeks ago. He had a large mass of glands in the neck and it looked like a case of Hodgkin's Disease. The glands formed a sizeable mass on the left side. They were discrete, freely movable, not tender but exceedingly hard—much too hard, I thought, for Hodgkin's Disease. He had been ailing for about five months with anorexia, fatigue and some nausea. No other palpable masses had been found by his original attendant, myself or the interne. I let him stay at home for the holiday week, but during that time he became worse, with a great deal of vomiting and pain. He entered hospital on New Year's Day and we found a definite mass in the epigastrium. Because the glands were so hard I had a biopsy done and Doctor Prendergast reported adenocarcinoma. Associating together the mass, the symptoms and the biopsy report, I regard him as a case of cancer of the stomach.

Doctor Wheeler: This man has a hard mass in the left side of the neck. A biopsy has demonstrated this to be adenocarcinoma. You state he now has a mass in the abdomen which we all can see, and which was not palpable two weeks ago. You definitely state that this man has carcinoma of the stomach. The basis of your diagnosis is certainly not clear to me.

Doctor Hossack: He has a mass in the stomach.

Doctor Wheeler: You mean he has a mass in the abdomen. Why do you think it is in the stomach?

Doctor Prendergast: Have you not an X-ray examination of his stomach?

Doctor Hossack: Yes, I had an X-ray taken but he was so sick that we had to wait a few days before it could be taken. In answer to Dr. Wheeler, I may say that I am going solely on probabilities. Most often an epigastric mass with the symptoms this man has had mean gastric cancer. Perhaps Dr. Wheeler will show us the plates. The mass could possibly be in the pancreas, but I hardly think so.

Doctor Wheeler: One would certainly hope that a man with a mass of this size in his stomach would show a positive finding on an X-ray. There certainly should be definite deformity of the stomach. From a radiological standpoint, the examination of the stomach is negative. I am prepared to go on record that this man has not a carcinoma of the stomach. I present to you the X-ray films. I think you will all agree that the stomach, as seen on these films, is perfectly normal. There is, however, something here of probable great significance. That is, there is distortion and enlargement of the duodenal loop. I think that all of you will admit that this duodenal loop is enlarged around something, which is lying within the loop. This suggests to me a mass which is growing inside this duodenal loop and expanding it. There is only one thing within the duodenal loop and that is the head of the pancreas. Therefore, I feel that this patient has carcinoma of the head of the pancreas. I admit that it requires considerable courage to diagnose this condition in the absence of marked jaundice.

We have also to consider the problem of the glandular mass in the neck. Doctor Burrell, would one expect to get metastases in this position from a carcinoma in the head of the pancreas?

Dr. Burrell: Certainly.

Doctor Wheeler: I again insist that a diagnosis of carcinoma of the head of the pancreas is a dangerous one to make and, if this is a carcinoma of the head of the pancreas, it is only the third one that I have diagnosed. Three cases are not many in twenty years.

Doctor Prendergast: I agree that it is difficult to diagnose a carcinoma of the pancreas.

Doctor Wheeler: The radiologist's opinion must be based entirely on the distortion of the duodenal loop.

Doctor Prendergast: I don't think there is a carcinoma of the head of the pancreas. It seems to me that it might be in the body. I believe that the lumen of the duodenum would have been stenosed long before this if the carcinoma were in the head.

Doctor Burrell: I don't think that this is a carcinoma of the head of the pancreas either. Because of the rapidity of the development of this mass it, too, may be secondary. The primary may be in the caecum. Has the large bowel been investigated?

Doctor Wheeler: This case is getting more complicated. I regret to admit that the X-ray department has received no requisition for an investigation of the large bowel.

Doctor Burrell: Even if you did not demonstrate carcinoma in the large bowel, I would still not admit that a small carcinoma might not be present. Recently, we have seen here, as you recall, four cases of small primary carcinomas, undiagnosed, with huge livers due to secondaries.

Doctor Wheeler: Doctor Burrell, you are then going one step further than Doctor Hossack; you are regarding both the mass in the central abdomen and the mass in the neck as secondaries, and placing the primary lower down.

Doctor Hossack: There is a great deal to complain of in the scientific investigation of this case. I did not order a barium enema and there are a good many other things I didn't order because the wife, who out of her own earnings is paying the bill, will soon be a widow. He is getting worse so rapidly that I am sure we would learn nothing that would help him to live. I think we will all learn a great deal more from an autopsy.

Doctor Wheeler: I agree with Dr. Hossack that this man is rapidly going down hill.

Doctor Hossack: There is something very much out of the ordinary about this case—the rapid appearance of a large mass which ought to be in the stomach but isn't; the rate of the patient's decline, and so on.

Doctor Wheeler: Whether this is carcinoma of the head of the pancreas or glands, the mass is there. Whatever it is, it is not obstructing the bile duct.

Doctor Burrell: Let's have a report on this man at a later date in order to be informed as to the exact pathology.

Doctor Wheeler: Dr. Hossack, do you think you can assure us that a post-mortem examination will be performed?

Doctor Hossack: I think I can.

Doctor Wheeler: This case has presented some very interesting factors, not the least of which is the uncertainty of the diagnosis. From our discussion we have really only two positive facts—the first being adenocarcinoma of the glands of the left side of the neck, and the second, a large rapidly growing mass in the upper abdomen. In order to close this case I would ask Dr. Prendergast to bear in mind that we are very anxious to receive his final decision.

The subsequent course was very stormy. Vomiting increased. There was much severe pain. Jaundice appeared and rapidly deepened. He died in two weeks.)

Postmortem Findings

"Head: Not explored.

Thorax: Enlarged firm glands high up in the mediastinum; cervical glands also enlarged; the rest of the cavity is normal.

Abdomen: No ascites; large retroperitoneal mass in the central abdomen extending from the lower border of the liver down to the promontory of the sacrum. The pancreas is obviously enlarged and sitting in a large mass of neoplasia. The common bile duct is surrounded and stenosed by the growth. The mesentery of the small bowel is short, very thick, and firm. There is no lesion of the

small bowel or colon. The new growth spills over to the left where a grapefruit-sized tumour is found. The tumour is partly necrotic with a haemorrhagic cyst in the lower half. The kidney is not invaded by the growth but is pushed down. The liver is not invaded. The gall bladder is distended. There are large inguinal nodes present.

Diagnosis: Primary adenocarcinoma of the left adrenal with retroperitoneal extension and metastasis to inguinal, cervical, and mediastinal glands.

Microscopical Report: Primary adenocarcinoma."

Tumours of the Kidney

Dr. L. R. Mackey.

Few surgical conditions of any organ or tissue have caused as much controversy and discussion as renal tumours. The confusion that exists in the terminology and histogenesis of kidney tumours may be attributed in a measure to the embryological development of the kidney. Tumours of the kidneys in general fall into three groups:

1. Tumours arising from renal epithelium.
2. Tumours arising from connective tissue.
3. Tumours of mixed cell origin.

Benign tumours of the kidney are so infrequent as to hardly warrant discussion. Malignant epithelial tumours on the other hand are the most common and the most important.

1. Tumours arising from renal epithelium.
 - (1) Those developing from renal tubules.
 - (a) Adenomas—benign.
 - (b) Adenocarcinomas (hypernephromas—not true).
 - (2) Those developing from the lining of the pelvis and calyces.

Epitheliomas, papillary, sessile (solid).
 - (3) Those arising from adrenal rests (very rare).

Adenocarcinomas (true hypernephromas).
2. Tumours arising from connective tissue.
 - (1) Benign—fibromas, myomas, lipomas, chondromas.

Tumours of vascular origin (haemangiomas and lymphangiomas).
 - (2) Malignant—sarcomas.
 - (3) Tumours of mixed cell origin.

Wilm's tumour (malignant tumour of childhood). A form of sarcoma.

Carcinoma of the kidney cortex constitutes 80% of all renal tumours. Both the adeno and alveolar carcinomatous picture may be present in the same tumour. Usually one type predominates.

The pathological picture is in harmony with the clinical data.

1. Papillary (adeno) carcinoma.
 - (1) Slow growth.
 - (2) Late appearance of symptoms.
2. Alveolar carcinoma.
 - (1) More apt to occur in individuals under 40 years.
 - (2) Recent origin—rapid growth—symptoms of short duration.
 - (3) Cachexia pronounced.
 - (4) Early metastasis.

Epithelial tumours arising from pelvis and calyces—1 in 14 of renal tumours.

Carcinoma of the Renal Cortex:

Solid tumours of the renal parenchyma occurring in adults are the most frequent occurring renal neoplasms. They are commoner in men than in women, the ratio being 2.5:1. They occur with almost equal frequency in either kidney.

Symptomatology

The symptom triad in order of frequency is painless haematuria, pain referable to the renal region and discovery of a mass. Reversal of this triad, with discovery of a mass as the presenting symptom indicates that the growth is advanced and often inoperable. In most of these cases, loss of appetite and weight, chills and fever, leucocytosis and secondary anaemia are also present.

Haematuria is the most frequent symptom which causes the patient to seek consultation. It usually signifies some gross pathologic lesion in the genito-urinary tract and requires complete investigation. In cases of haematuria where the source is obvious one should also think of the possibility of renal tumour as a second condition. Often repeated examinations are necessary before a definite diagnosis of renal neoplasm can be made. The

haematuria may be intermittent, occurring at frequent intervals over a period of months. Examination of the ureteral orifices should always be carried out; however, at the time that the patient is examined there may be no bleeding. One can make no deductions from the amount of haematuria as it may vary from a few blood cells to large clots causing obstruction of the ureter.

Other symptoms include loss of weight and appetite, chills and fever, general cachexia and anaemia. In such instances the tumour has either metastasized or assumed large proportions. Secondary infection may occur with the usual symptoms of pyelitis. Varicocele sudden in appearance and caused by venous obstruction may be present although it is much rarer than the textbooks would lead one to believe. Symptoms due to metastases in the lungs and bones may be the first indication that tumour of the kidney is present.

Diagnosis obviously must be early to offer the only chance for complete and permanent cure. This is seldom made, for the tumour has to assume considerable size before haematuria, pain or palpable tumour occurs. Relatively early diagnosis is made only by a complete urologic examination, including a pyelogram of all cases presenting any upper urinary tract symptoms. The tumour after it is large enough to be palpable is not difficult to diagnose, but very difficult to cure. Palpation should be carried out in all suspected cases and bimanual examination is the most satisfactory. Its value is limited when the tumour is small. Functional tests are not very conclusive, as enough kidney substance may be left to produce normal readings. The finding of fragments of tumour in the urine is quite helpful but is of infrequent occurrence. Cystoscopy when done during the active phase of bleeding will reveal which kidney is at fault, although it does not in any way diagnose the etiologic pathology. Pyelography is the most valuable single method of diagnosing early renal neoplasm. The interpretation of the pyelogram may be most difficult and requires wide experience. By drawing the catheter down the ureter a ureterogram should also be made. This will reveal any filling defect due to implants in the ureter and it also gives valuable information regarding the lower pole of the kidney. If a tumour is present in the lower pole and is growing toward the median line, the ureter where it leaves the uretero-pelvic junction will be pushed upward and inward and assumes a rectangular distortion.

The ureter may point almost perpendicularly to the vertebral column for some distance as it passes over the surface of such a growth. This form of distortion of the uretero-pelvic juncture and upper third of the ureter is typical of growth in the lower pole of the kidney. If one combines cystoscopy with a plain plate and pyelogram with a study of the urinary sediment in all cases of haematuria, more renal tumours will be clinically diagnosed than formerly.

Treatment

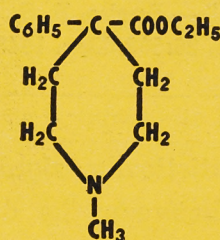
In borderline cases renal tumours present real problems for surgical judgment. The only chance of cure is by nephrectomy, if this can be carried out safely. It is also true that many renal neoplasms can be removed which are thought to be inoperable before exploration. It is also unfortunately true that attempts have been made to remove kidney tumours that are inoperable. Unless the tumour is obviously inoperable, an exploratory operation should be routinely done and then if it is found to be inoperable the surgeon should withdraw. Before considering operation a roentgenogram should be taken in all cases of the chest and long bones for evidences of metastases. The size or position of the tumour are no criterion of whether or not it has metastasized. Occasionally tumours which have already metastasized are removed because of excessive bleeding which they produce. In some cases where such a tumour cannot be successfully freed the situation may be handled by simple ligation of the vascular pedicle.

The benefit of X-ray and radium in such cases is still doubtful. Their use on the tumour previous to operation may reduce the size of the tumour but it certainly renders the operation more difficult and bloody. It is also impossible to say whether the good results reported by their post-operative use are due to their preventing growth of residual tumour tissue or whether the cure of the patient has already been effected by the complete removal of the tumour at operation.

Dr. Mackey cited the history of a male patient, aged 64 years, with a kidney tumour. Herewith cystoscopy findings on December 27, 1944. Left retrograde pyelogram made: The lower calyx is cut off with the remaining calyces displaced upwards and a large soft tissue mass in the lower pole of the kidney; these findings are consistent with a large kidney tumour. On January 10, 1945, a left nephrectomy was done by Dr. Morse. Recovery was uneventful. The tumour was an adenocarcinoma.

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Reporting a "statistically significant relationship . . . between the diet of the mother during pregnancy and the condition of her infant at birth and within the first 2 weeks of life," the authors of the study quoted above conclude that if the mother's diet is good or excellent, "her infant will in all probability be in good or excellent physical condition."

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St. Boniface Hospital

Lymphatic Leukemia With Bone Involvement

Doctor H. M. Edmison

On January 19th, 1945, a fourteen-year-old boy was admitted to St. Boniface Hospital. He complained of bleeding from the nose on numerous occasions since the first of January, weakness and shortness of breath since early in December, and of having lost about thirty pounds during the last two or three months.

He first became ill in July of 1944 with general malaise, which was followed by nausea and vomiting, and was considered to have "Summer Flu". On August 23rd he was admitted to the Brandon General Hospital, and at this time the possibility of undulant fever was considered. This was excluded by serological tests, but Typhoid fever was considered likely. He returned home after four weeks, unimproved, and soon began to have convulsions and delirium, accompanied by extreme elevation of temperature. This was followed by two further admissions to hospital, where he remained until transferred to St. Boniface Hospital on January 19th.

History of previous illness and family history were essentially negative. When examined he was emaciated and obviously very anaemic. Enlarged glands were present in the cervical, axillary and inguinal regions. The spleen was just palpable and the liver was slightly enlarged. Apparently blood findings had been indecisive until about two weeks before he was brought to Winnipeg, when the white count rose to 90,000, lymphocytes predominating. The following is data on Blood Count taken on January 24th, 1945:

R.B.C., 2,790,000; haemoglobin, 56%; W.B.C., 40,750; smear, 90% lymphocytes, both mature and immature forms being present; free bleeding time, 10 minutes; platelets, reduced; clotting time, 3 minutes.

An X-ray film of the chest showed evidence of slightly enlarged mediastinal glands. Films of the bones revealed extensive areas of destruction throughout the entire skeleton. Osteolytic lesions of various sizes were most pronounced in the skull and long bones. The periosteum of the latter was elevated and thickened.

The patient continued to have bleeding from the nose and his condition became gradually worse. He died January 27th. Post-mortem was refused.

The term, lymphoblastoma, is frequently used to include lymphosarcoma, Hodgkin's disease, and lymphatic leukemia. Bone may be involved in any of these conditions. Some pathologists have stated the incidence to be as high as 40%, but it is not demonstrated radiologically in anything like that percentage. According to Craver and Copeland, radiographic evidence of bone involvement is 1%, 2% and 3%, in the order given above. Bones affected are those of the spine, the long bones, skull, pelvis and scapula. Lesions are usually multiple, and as a rule are osteolytic, but occasionally bone formation is stimulated. In the case of lymphatic leukemia the marrow and sub-periosteal tissue are invaded by lymphatic cells. At first only isolated islands of lymphoid tissue are present, but eventually the entire marrow may be replaced. The cortex may also be destroyed.

Aleukemic lymphatic leukemia is relatively frequent in young people and in these cases the blood picture may not be diagnostic for several months, as in the case under discussion. It is also stated that bone involvement is more frequent in the so-called aleukemic form of the disease. The skeletal manifestations vary widely. Numerous areas of destruction are found, producing areas of rarefaction. These are usually near the ends of the diaphyses, but may also be in the epiphyses, and even in the cranium and flat bones. The periosteum is elevated by the sub-periosteal leukemic tissue and thickened as a result of excessive production of sub-periosteal bone. In the most severe cases the skeleton may be riddled by large and small osteolytic lesions. It is difficult to imagine a case more advanced than the one we have just seen.

The changes just described are not diagnostic alone, for the same appearance may be simulated by generalized metastases, especially those from a neuroblastoma. In the adult, secondary malignancy from a number of other organs, and also multiple myeloma, might cause a somewhat similar appearance. It is unlikely that the diffuse decalcification and cyst formation sometimes seen in parathyroid adenomas would be confused with this condition.

Doctor A. Hollenberg and Doctor Bruce Chown contributed to the discussion. H.M.E.

Infections in Diabetes—Dr. A. Hollenberg

In addition to the many people who suffer from diabetes there is a large group of potential or latent diabetics. These are people who have a low sugar tolerance. This tolerance, because it is low, can be easily broken down by infection and infection in diabetics is a serious thing. High blood sugar is conducive to the breeding of organisms and to the development of acidosis. However, it interferes with the body forces that combat infection. It will be noted that in diabetics a mild infection only produces high blood counts—20,000 to 25,000. Infection in diabetics should be treated, as far as possible, by prevention. Diabetics who require surgery should be put on sulphonamide therapy for three or four days before operation. In the administration of the sulfa drugs to diabetics one should use liberal amounts of soda bicarbonate as sulphonamides are poorly excreted in acid urine and most diabetics have acid urine on account of their tendency to ketosis. It must be remembered that any infection lowers the potency of insulin so that larger doses are necessary to produce the same effect. Most diabetics develop infection around their toes. Great attention, therefore, should be paid to the feet. The organisms found in infected toes are usually gas formers hence the use of potassium permanganate and peroxide of hydrogen are the antiseptics of choice.

* * *

St. Joseph's Hospital

Treatment of Burns—Dr. J. A. MacDougall

Dr. MacDougall gave a very comprehensive review of the recent literature dealing with the treatment of burns. There were about as many methods as there were authors although, in general, the preferred remedies were the sulpha drugs, tannic acid, triple dye, boric acid, saline baths and pressure with, of course, the treatment of the constitutional factors requiring special attention. It would appear that there is no uniform or standard treatment and the success claimed for the several methods depends in no small degree on the development of techniques well understood by their users and individualized to suit each case.

Winnipeg General Hospital

Spontaneous Parathyroid Tetany

Dr. Charles Hunter

A rare case of spontaneous hypoparathyroid tetany: This is the second case that Dr. Hunter has seen in his experience. Most hypoparathyroid symptoms are due to operative interference with the parathyroid glands. The patient is a female, married, 39 years old. Dr. Hunter had first seen her in April, 1933. At that time she had crowing breathing, muscle spasm, particularly of the hand, and peculiar mental symptoms at the time she had muscle spasm. At this point, although serum estimations were not done, it was probably extremely low. Dr. Hunter gave the patient a diet high in calcium and calcium lactate per ora. Eighteen months later the patient was improved but had a peculiar tingling in the arms and legs. Blood pressure was 120/80. At this period the patient had "main en griffe"; this hand spasm could be excited by the putting on of a blood pressure cuff on the arm. Spasm of the face muscles could be produced by tapping over the exit of the facial nerve. At this time and at various periods since the patient has had peculiar blue spots on the skin which cannot be explained. Serum calcium at this period was 4.9 (lower limits of normal 9-10). Seven months later symptoms were improved, although the odd twitching was still present. Dr. Hunter called this a latent stage. There were signs of hypothyroidism, and desiccated thyroid was added to the patient's medication. Serum calcium at this period was 6.7. Calcium lactate was discontinued and calcium chloride grs. 20 six times daily, plus Viosterol, was given. In 1939 the patient appeared again—nervous, serum calcium 6.4, and B.M.R. -2. With rest and previous medication she soon improved. From 1939 to 1944 the patient enjoyed fair health. In 1944 her serum calcium was 10.3; she must use calcium chloride 20 grains twice daily if she wishes to avoid symptoms of hypoparathyroidism.

Dr. Hunter has had 18 cases of hypoparathyroidism; two had typical hyperventilation of hypoparathyroidism with normal serum calcium. Dr. Hunter mentioned the value of Sulkowits test for the detection of calcium in the urine. He mentioned the difficulty in getting a diet sufficiently high in calcium and phosphorous that appealed to the patient.

Dr. A. T. Cameron contributed to the discussion.



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Next Meeting
Friday, March 16th

W. F. Tisdale, Secretary
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The Society

Our affairs are in good shape. Since the session began 24 new members have been enrolled. Now we have 81% of the local profession with us. The finance situation also is satisfactory. Only 18 members are still in debt for their fees.

Overseas Parcels

Preparations are underway for the shipping of Easter parcels to our friends overseas. Those who wish to make donations are asked to send their cheques to the treasurer, Overseas Fund, 510 Medical Arts Bldg. Acknowledgment will be made in these pages and receipts will be sent.

The Meetings

The papers given at the February meeting were well received. Dr. McQueen gave his results in cases of Cancer of the Cervix. Dr. W. F. Abbott spoke on Habitual Abortion and Dr. Bruce Chown dealt with the role played by the absence of the Rhesus Factor. Dr. Earl Stewart reported on the latest measures employed in the Battle of the Trichomonas. These pesky little beasts exhibit a most diabolical pertinacity. Apparently they are harder to dislodge than an Aberdonian with his foot on a bawbee. Dr. Stewart thinks that he has their measure but, mindful of the extraordinary tenacity with which they cling to life, he hopes rather than believes that he has settled the matter. (Song of the Gynecologists—"Oh! there's no one has endurance, And nothing makes us groan as, The man who sells insurance, And the beastly Trichomonas"). I hope you'll have a chance to see all these papers in the Review in the near future.

Programme for March—Dr. Charles Hunter, Tetany; Dr. S. S. Peikoff, Intersexuality; Dr. Marjorie Bennett, Treatment of Chronic Mastitis with Vitamin B.

Subleukemic Leukemia

The case described by Dr. Edmison elsewhere in this issue suggests that a note on subleukemia may not be out of place. Apparently the true nature of the disease was not suspected in this boy until the end was almost near. Perhaps it is not sufficiently realized that the subleukemic form is far from rare. More than half the cases examined at the Simpson Memorial Institute were in the subleukemic phase when first seen. This

was specially true of patients suffering from acute lymphoblastic leukemia. Taking leukemias as a whole over ten per cent are aleukemic, that is they reveal no, or very few, abnormal cells at any time.

Leukemia of any sort, whether lymphogenous, myelogenous or monocytic, is regarded as being a neoplasm with circulating metastases. The metastases however, that is the abnormal cells, may be scanty and we may find, as in the case reported, all the phenomena of the disease except the cell increase. This subleukemic phase may be a recurring one, or it may be initial or terminal, or it may be uninterrupted. In adults subleukemia is most often monocytic in which there is neither splenomegally nor lymph-gland enlargement to assist in diagnosis.

The diagnosis of leukemia depends essentially upon the discovery of large numbers of immature leukocytes in the presence, usually, of a leucocytosis. The appearance of the cells and not their number is the important thing. Sometimes only an experienced eye can detect the abnormalities upon which, especially in subleukemia, so much depends. The abnormal cells may be found in large numbers in the sternal marrow which should therefore be examined in all cases where there is doubt.

In the presence of a white-cell count that is normal or low, how can one then recognize the presence of leukemia? In the acute form the disease has often a sudden and stormy onset, but at times it may begin quietly with increasing weakness and pallor. Sometimes it appears as a septic process with fever headache, sweating and prostration. However it starts the illness quickly becomes established. Fever with pallor rapidly developing may appear in the absence of obvious anaemia and this is particularly significant. Anaemia, usually normocytic and normochromic, is increased by haemorrhages which are due to the diminution in platelets, and which appear in the skin, and from the gums and throat. The enlarged tonsils, the ulcerations in the throat and the tendency to bleed, especially in the presence of a very low leucocyte count, suggests agranulocytosis; but this latter diagnosis can seldom be supported in the case of a child unless a likely cause, such as sulphonamide therapy, is present.

When the symptoms center themselves in the joints, rheumatic fever may be suspected. Extensive purpura and bleeding may point to thrombocytopenic purpura but this can be excluded by finding normal clotting time. The buccal lesions may yield Vincent's organism and the whole illness be regarded as Vincent's Angina. When the enlarged glands are in the neck (and sometimes none other are enlarged) and the symptoms are not severe, there may be a question of Infectious Mononucleosis. This also is a disease of childhood with the symptoms of an acute infection. The illness is not so severe, however, and the blood-picture is very different. Furthermore there is no anaemia, the platelets are not affected and the heterophil antibody test of Paul and Bunnell is positive.

Failure to recognize the presence of acute leukemia carries no penalties. No method of treatment at our disposal can even postpone the inevitably fatal issue. In the chronic forms of leukemia X-Ray therapy can prolong life by five or more years, that is until the tissues will no longer react to radiation, but in the acute forms the course is the quick and inexorable one that is characteristic of malignancies in the young.

Arnold of Villanova and Menotoxin

Arnold of Villanova (1235-1312) was a man of great versatility. He was a doctor of medicine, law, theology and philosophy and placed his varied knowledge at the disposal of Pedro III, King of Arragon. Being a bit ahead of his time he got into trouble with the Inquisition which successfully hounded him from place to place until he met death by drowning. Arnold, among other things, is famous for his "Commentaries" the third book of which he begins in the following manner: "In this book I propose, with God's help, to consider the diseases peculiar to women. And since women are, for the most part, poisonous creatures, I shall then proceed to treat of the bites of venomous beasts."

Misogynous Arnold was not, perhaps as unchivalrous as he sounds. In the folk-lore of all peoples menstruating woman was regarded as toxic. Pliny the Elder, whose industry and enthusiasm were exceeded only by his credulity has much to say about it. "It would be difficult to find anything which is more productive of more marvellous effects than the menstrual discharge. On the approach of a woman in this state, milk will become sour, seeds which are touched by her become sterile, grafts wither away, garden

flowers are parched up and the fruit will fall from the tree beneath which she sits... If she walks round a field of wheat, the caterpillars, worms, beetles, and other vermin will fall from off the ears of wheat." Many, many more evidences of woman's catamenial prowess are related by Pliny but let these suffice.

The interesting thing is the fact that in all this bosh there is a modicum of truth. About a year ago Macht of Baltimore published a paper in which he says "Experimental data demonstrate in the blood and secretions of menstruating women the presence of a toxic substance or menotoxin, which is poisonous for plants and animals." "The spoiling of foods such as fruits, vegetables, cucumbers and cabbages may be satisfactorily explained by the pharmacological effects of menotoxin". "There appears to be a physical basis for the legal or systematic regulation in various industries prohibiting women who are menstruating from engaging in the manufacture of perfumes, tending of silkworms and expressing grapes for the making of wine." "In the light of experimental findings one can stress the fact that dough kneaded by menstruating women is liable to result in lumpy and poorly risen bread."

The importance of menotoxin lies in the role it may play in the ill-health of women. It may be this menstrual toxin which is responsible for the exacerbations and remissions of symptoms and for the disturbances which are activated or aggravated during menstruation. The endocrinopathies which are now so largely blamed may themselves be the result of abnormal stimulation, and the failure of sex hormones in treatment may be due to the fact that the apparently affected glands are not themselves at fault. About all this there is a good deal of hypothesis but it is probable that with a better understanding of the nature and actions of this substance there will come useful adjuncts to the treatment of ailing women.

J.C.H.

* * *

Obituary

Dr. Stanley Earl Patterson

Dr. Stanley Earl Patterson, M.D., Man. 1928, a brother of Dr. Walter Patterson, Holland, Man., died on February 6 at Grand Forks, North Dakota. He was buried at Roland, Man., on February 9. Our sympathy is extended to Dr. Walter Patterson on the loss of his brother.



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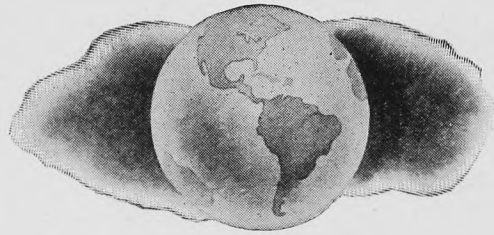
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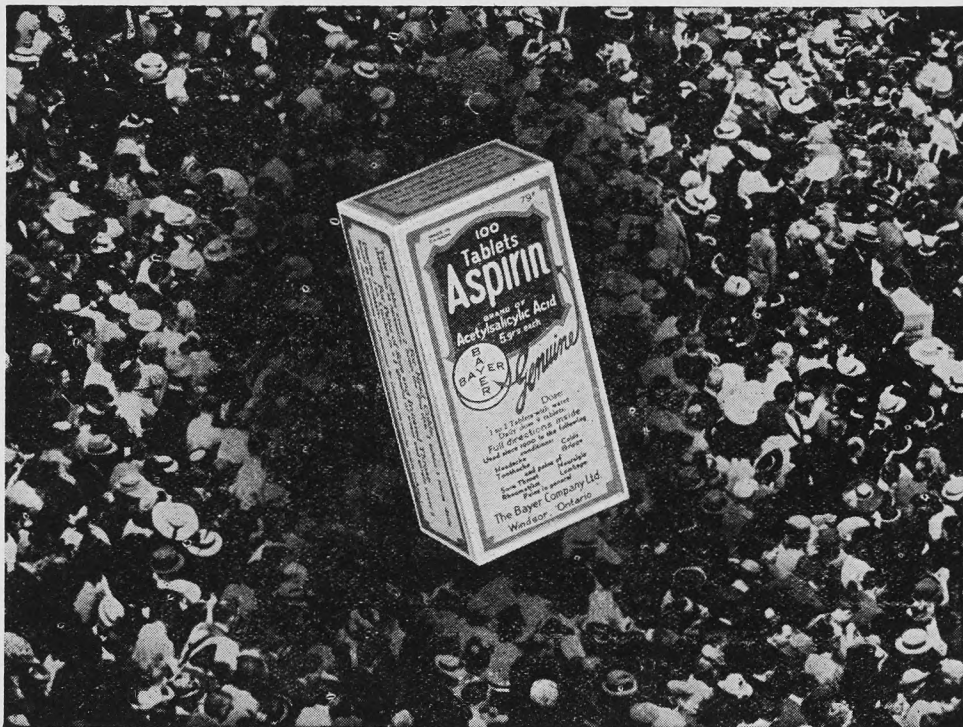
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One of the safest—probably the safest—of all analgesics is Aspirin. Proven safe by over forty-seven years' use, by millions of people in all walks of life, Aspirin enjoys an unique place in the field of pain alleviation. Aspirin, in therapeutic dosage, is known to be one of the least toxic of all analgesic drugs even when used over long periods of time.

ASPIRIN



Something Old

The Handicaps of the Physician

The variable composition of man's body hath made it as an instrument easy to dis-temper; and therefore the poets did well to conjoin music and medicine in Apollo, because the office of medicine is but to tune this curious harp of man's body and to reduce it to harmony. So then the subject being so variable, hath made the art by consequent more conjectural; and the art being conjectural hath made so much the more place to be left for imposture. For almost all the other arts and sciences are judged by acts or masterpieces, as I may term them, and not by the successes and events. The lawyer is judged by the virtue of his pleading and not by the issue of the cause. The master in the ship is judged by the directing of his course aright, and not by the fortune of the voyage. But the physician hath no particular acts demonstrative of his ability but is judged most by the event; which is ever but as it is taken: for who can tell, if a patient die or recover, whether it be art or accident? And therefore many times the impostor is prized, and the man of virtue taxed. Nay, we see the weakness and credulity of men is such, as they will often prefer a mountebank or witch before a learned physician. And therefore the poets were clear-sighted in discerning this extreme folly, when they made Aesculapius and Circe brother and sister, both children of the sun. For in all times, in the opinion of the multitude, witches and old women and impostors have had a competition with physicians. — Francis Bacon, "The Advancement of Learning."

Barbers and Surgeons

Ordinance adopted by the Dutch authorities of New Amsterdam in 1652:

"On the petition of the chirurgions of New Amsterdam, that none but they alone be allowed to shave; the director and council understand that shaving doth not appertain exclusively to chirurgery, but is an appendix thereunto; that no man can be prevented operating upon himself, nor to do another the friendly act, provided it be through courtesy and not for gain, which is hereby forbidden." It was then further ordered that "ship-barbers shall not be allowed to dress any wounds nor administer any potions on shore without the previous knowledge and special consent of the petitioners, or at least of Doctor La Montagne."—Medical Register, New York, 1865.

Something New

Infantile eczema is very often due to contact with human dandruff. Simon of Louisville obtained positive skin reactions to patch tests in 15 out of 20 eczematous children, but only once in 23 children free from eczema.

Artificial fever may, in the future, be induced by the use of pyrexin. This substance has been isolated from inflammatory fluids by Valy Menkin of Duke University. Its use is unattended with danger and its action appears to be upon the hypothalamic heat-control center.

Retinal haemorrhage in diabetics can be prevented or delayed by including a larger proportion of protein in the diet.

Commander Coburn of the United States Navy, reporting on **sulfadiazine prophylaxis of respiratory diseases**, had this to say: The drug had been given to 600,000 navy personnel; the morbidity rates were definitely reduced; hospital admissions for respiratory diseases fell from 5 to 18 per thousand to 1 per 1,000; meningococcus infections were abolished, streptococcal infections reduced by 85%; a daily dose of 0.5 gram was found to be adequate.

In **poliomyelitis** the sulpha drugs not only are valueless in treatment but are positively dangerous. According to Toomey of Cleveland their use may be followed by massive extension of the paralysis.

Penicillin in an impure form has been found to kill **sarcomatous tissue** without injury to normal structures.

Penicillin is rendered doubly effective by applying an ice-pack over the site of injection. Because the rate of absorption is slowed bacteriostatic levels are maintained for six to twelve hours. Two or three injections in twenty-four hours will thus be as effective as double the number given in the ordinary way. Such at least has been the experience of two officers in the United States Navy—M. Trumper and A. M. Hutter.

When it is undesirable to remove casts for a long time the **evil smell of plaster-encased wounds can be abolished** by painting the stained areas of the cast with a saturated solution of iodoform in compound tincture of benzoin. Silver and Rusbridge of the U. S. Army treated in this way compound fractures which were encased up to seven weeks without change of cast.



Sulmefrin is available in 1-oz. dropper packages and 1-pint bottles. Pink-tinted solution.

**Also Available
SULMEFRIN
OPHTHALMIC**



A special formula for treatment of ophthalmic infections caused by sulfathiazole-sensitive organisms. Supplied in 1-oz. dropper bottles. Yellow-tinted solution.

SULMEFRIN* *gives relief
from discomforts of winter colds*

**Shortens their course in some instances
Relieves pressure pain in blocked sinuses**

SULMEFRIN decreases congestion by the vasoconstrictor action of *dl*-desoxyephedrine hydrochloride, thus assisting the antibacterial action of sodium sulfathiazole. The vasoconstrictor is also believed to facilitate the sulfonamide in reaching the deeper layers of the nasal mucous membrane.

The mild alkalinity of Sulmefrin (pH approx. 9.0) is preferable according to Turnbull et al¹ for nasal medication because (1) the sulfonamide has the greatest bacterial action in the pH range from 8 to 10, and (2) because it allows ciliary action to continue for a long period of time.

Sulmefrin may be administered by spray, drops, or tamponage.

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Editorial

J. C. Hossack, M.D., C.M. (Man.), Editor
R. B. Mitchell, B.A., M.D., C.M. (Man.), F.R.C.P. (C), Associate Editor

Health Plan

At the recent special meeting on the Health Plan, the Hon. Ivan Schultz outlined the provisions, adding little to what has already been published but emphasizing certain points which are of great importance to us. He repeatedly affirmed that the Government sought neither to dictate to nor to regiment the profession. The practice of medicine was the doctors' concern and would be left in their hands. The Government, he said, asked for and desired the guidance and advice of the doctors for obviously no plan could succeed unless it had the support, the approval and the co-operation of the medical profession. Such a happy beginning augurs well for the future of the plan.



Marihuana

Recently I read the story of a young and charming maiden who, while a school girl had been lured into using marihuana, an experience which led to a series of disasters culminating in her suicide. Tales of debauchery, juvenile delinquency and crime, associated with marihuana, are common and the belief that a very dangerous vice was rampant among the youth of New York so alarmed Mayor La Guardia that he determined upon an investigation of the matter. With the assistance of The New York Academy of Medicine a Committee was formed including internists, psychologists, pharmacologists and social workers. The report of this committee has just been published. It tells everything that is known about the drug, its action and its effects.

The social problems were considered first. The extent of the habit, its incidence among school children, its relationship to crime and its effect upon its users were all investigated. Specially selected plain-clothes officers watched the schools, interviewed the teachers, mingled with the scholars. They found that in the Harlem district, the one chiefly affected, there were about 500 peddlers and an equal number of "tea-pads." These latter are places specially equipped for the use of addicts. They are comfortably furnished, dimly lit, filled with the aroma of burning incense and the strains of soft music, where devotees gather and smoke their drug. Each addict smokes from two to 12 cigarettes, the number depending upon the strength, but

stops as soon as he reaches the state designated as "high." In this condition he enjoys a pleasing feeling of adequacy. Free from anxiety and care he converses easily and quietly with others in the room. Rowdy or boisterous smokers are rare and not tolerated.

The Mayor's Committee concluded that there was no organized traffic in the sale of marihuana to school children, that the number of juvenile smokers was not high, that the practice of smoking marihuana did not lead to addiction, delinquency or crime, and that there was no basis in fact for the tales of its catastrophic effects upon the minds and morals of its users.

Clinical studies were conducted on 77 persons who were confined in penal institutions for having committed minor offences. All belonged to that stratum of society where addiction was most common. Five had never used the drug, the others had been smokers for varying times. The group included men and women. The drug was given in the form of cigarettes and also by mouth in the form of a concentrate. The physical effects were increase in pulse rate, in blood pressure and in appetite. The blood sugar and metabolic rate were raised and there was some urinary frequency. Otherwise the many tests showed no impairment of any function.

The psychological studies were exhaustive. Very many tests were employed before and after the administration of the drug both by mouth and by smoking. The emotional reactions and reactions to the family and the community were studied carefully. The conclusions arrived at indicate that marihuana gives its users feelings of self-confidence and relaxation, with diminution of physical activity and with some intellectual impairment while the drug is active. Use of the drug did not change the subject's attitude towards his family or community, and did not produce mental or physical deterioration. Eroticism, so prominent in the popular tales was roused seldom and little. Users avoid alcohol because liquor "brings them down."

The pharmacological study deals in detail with the pharmacological actions of the drug and with the discovery, the characters and the actions of the active principles.

This study is so exhaustive that it leaves no question unanswered, and so authoritative that one can confidently accept its conclusions. It reveals marihuana addicts as a

feeble vice in no way comparable to other drug habits and not at all deserving the lurid publicity it has been given. The book itself is a neat volume of 220 pages, very readable, well arranged and quite invaluable to all who in any way are concerned with the problem of marihuana addiction. The Marihuana Problem in New York, by the Mayor's Committee on Marihuana. The Jacques Cattell Press. \$2.50.

J.C.H.

Clinics

The December number of Lippencott's "Clinics" is to hand. This issue contains two symposia, one of 14 articles on Dermatology, the other of 16 articles on Proctology. The Dermatology Section is equivalent to a small text book (270 pages) on the subject. There are papers on the psychosomatic aspects and on the relationship of skin disorders to nutrition, to industry and to the endocrines. Eczema in infants, fungus diseases and all the commoner diseases receive consideration. There

is a useful article on the choice and preparation of remedies and an important one on sensitization from topical chemotherapy of Sulphanamide Drugs. The text of this latter contribution lies in the sentence "Experience of approximately two years with over a hundred cases of widespread, incapacitating and recalcitrant dermatitis from application of the sulphanamides, often for trivial and evanescent eruptions, along with an increasing number of reports in the literature indicates the practical importance of this subject."

The section on proctology (100 pages) deals with such subjects as the present status of surgical treatment of rectal cancer; the control of pain in ano-rectal surgery; pilonidal disease, pruritus, polyposis, etc. There is a paper on multiple primary malignancy, one on x-ray diagnosis of polyposis of the colon and one on carcinoid. Gastro intestinal bleeding of psychogenic origin is discussed in another article—Clinics: J. B. Lippencott and Co. bi-monthly, \$12.00 per year.

Obituaries

Dr. Robert Mills Simpson

Dr. Robert Mills Simpson died in Ottawa on February 2 at the age of 80. Born in Carleton Place, Ont., he came west in 1883 and settled near Marquette. After teaching school for a year he entered the second class in the newly formed Manitoba Medical College, graduating in 1887. Two years were spent in practice at Great Falls, Montana, and St. Paul, Minn., and then he studied for another two years in English hospitals. Returning to Winnipeg he became successively professor of materia medica and therapeutics, of medicine, and of gynecology. In 1927 he retired with the rank of emeritus professor of gynecology. For many years he was chief surgeon to the Hudson's Bay Company and surgeon to the Canadian Northern railway. In 1911 he was chairman of the Manitoba Board of Health and president of the American Public Health association which met in Winnipeg that year.

As chairman of the Board of Health he was one of the founders of the Manitoba Sanatorium in Ninette in 1910 and was first chairman of the Sanatorium Board. He was a member of the board for almost thirty years.

For eight years he was president of the Conservative association of Winnipeg and later was treasurer of the association. In 1915 he enlisted as a lieutenant in the Can-

adian Army Medical Corps and for a time commanded No. 1 Canadian General Hospital at Etaples, France. Following this he became D.D.M.S. Canadian Corps. In 1918 he was appointed colonel and in 1919 he returned to civilian life. During his service he received the D.S.O., O.B.E., and was three times mentioned in despatches.

He is survived by his only son, Peter, of Toronto.



Dr. Robert Clement Ernest Magee

Dr. Robert Clement Ernest Magee died in the Winnipeg General Hospital on February 13 at the age of 69. Born at Ottawa, Ont., he received the Bachelor of Arts degree at McMaster University in 1901, and came to Manitou. In 1906 he graduated from Manitoba Medical College. After practising at Napinka and Pipestone, he took post-graduate work in 1921 in New York. On his return he practised in Winnipeg as an eye, ear, nose and throat specialist. From 1922 to 1936 he was a member of the honorary attending staff of the Winnipeg General Hospital, and from 1923 to 1933 lecturer in otology in the Faculty of Medicine, University of Manitoba. He is survived by his widow, a daughter, Mrs. (Dr.) R. G. Greer, a son (now a student in medicine), and two brothers, one of whom is Dr. Ross Magee of New York.

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SYSTEMIC SAFETY

White's SULFATHIAZOLE GUM

... in effective topical Oropharyngeal chemotherapy

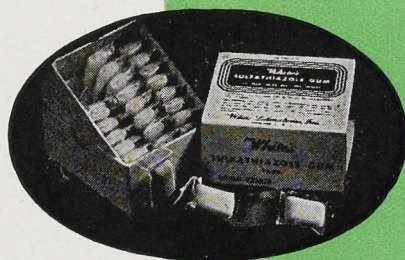
The unique value of this new, effective method for the *local* treatment of certain throat infections consists in this:

1. Chewing one tablet provides a *high* salivary concentration (averaging 70 mg. per cent) of *dissolved* sulfathiazole ...
2. that is *maintained* in immediate and *prolonged* contact with oro-

pharyngeal areas which are not similarly reached by gargles or irrigations ...

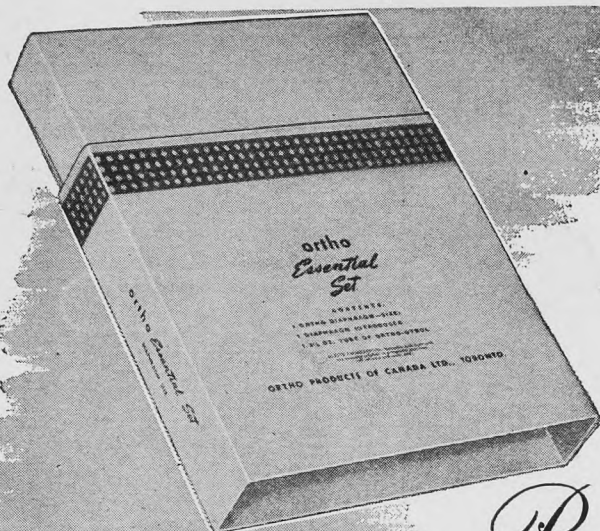
3. Chewing two tablets increases this concentration by 20 per cent ...
4. with a relatively small ingestion of the drug, with either dosage, and consequent negligible systemic absorption.

Typical infections which have shown excellent response to treatment with White's Sulfathiazole Gum are acute tonsillitis and pharyngitis, septic sore throat, infectious gingivitis and stomatitis caused by sulfonamide-susceptible micro-organisms. Also indicated in prevention of local infection secondary to oral and pharyngeal surgery.



Supplied in packages of 24 tablets, sanitaped in slip-sleeve prescription boxes —on prescription only.

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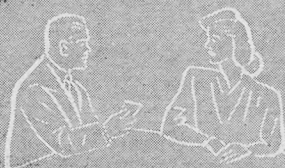
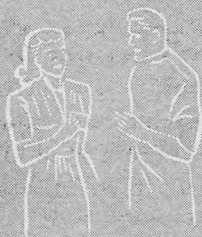
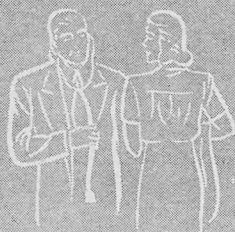


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The one package contains all the essential items ... (R_x package Ortho-Gynol with removable label; Ortho Diaphragm; Universal type Introducer). The Ortho Essential Set can be prescribed with absolute assurance that the items it contains are the result of years of laboratory and clinical research, and meet with every requirement of medical science.

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Tribute to a Manitoba Boy

By Ross Mitchell, M.D.

Though the fog of official secrecy envelops the doings of our boys in the armed forces, it is occasionally pierced by a gleam from official or other sources. An example of the latter comes from Lieut.-Commander Robert Hitchens' extremely readable little book, "We Fought Them in Gunboats". The author, a solicitor in Falmouth at the beginning of the war, became known three years later when he had the D.S.O. and bar, D.S.C. and two bars, as "The Nelson of the Navy's little ships". One year later he was killed in action. The London Daily Express calls his book "the greatest naval book of the war". Hitchens' flotilla had been signally successful in destroying a German tanker with her attendant trawlers, but several of the British crew had been killed or wounded in the short but savage encounter. The flotilla was returning to England. The quotation follows:

"We slid up harbour, the town still sleeping, and made fast to the pontoon to land our dead and wounded. All was still and peaceful, the ships reflected in the tranquil water, smoke rising straight in the quiet air. With the coming of day the wind had dropped. The harbour looked exactly as I have seen it so often of a fine summer's morning, soft-toned delicate greys and blues; only the bodies, wrapped in blankets, lifted on stretchers, seemed incongruous.

"Prominent amongst our friends ashore was the coastal force base doctor, Bob Swan, a Canadian, who thus early was called upon to show his worth. And what a showing he made! He was tireless in his efforts on our behalf. He concerned himself not only with the wounded, but with the active sea-going

personnel. He studied our problems and produced valuable suggestions. Nothing was too much trouble for him. He noticed that we came in with red, sore eyes after a rough night, and produced eye shields and eye lotions. He saw that several of the men and one officer were beginning to suffer from a bout of hay fever, and he produced the necessary preventative before they were fully aware of their trouble. He saw that we were working night after night, and produced benzdrine and vitamin pills. At one time I went out on ten successive nights, and at another, eight nights running. There were occasions when I was considerably exhausted, but I was determined to deal faithfully with the E-boats and I knew that opportunities for rest would come when the weather broke. Swan's concern on my behalf, however, was often quite embarrassing. He would shake his head over me and utter the direst warnings if I continued. I was not used to such attention. Tall and rather thin, with a pale face, he did not look strong himself. Whether that was so or not, he did not spare himself, and the whole flotilla appreciated his efforts greatly. Aside from his professional activities he was the pleasantest of companions, and did much to make our life easier and more amusing."

Those who knew Bob Swan as a medical student, when he was Senior Stick, and as an interne for two years in the Winnipeg General Hospital, are not surprised at this tribute. He joined the Navy in 1940 and is Surgeon-Lieut.-Commander Robert S. Swan, R.C.N.V.R., serving on H.M.C.S. Assiniboine. He is a son of Dr. and Mrs. R. Rennie Swan.

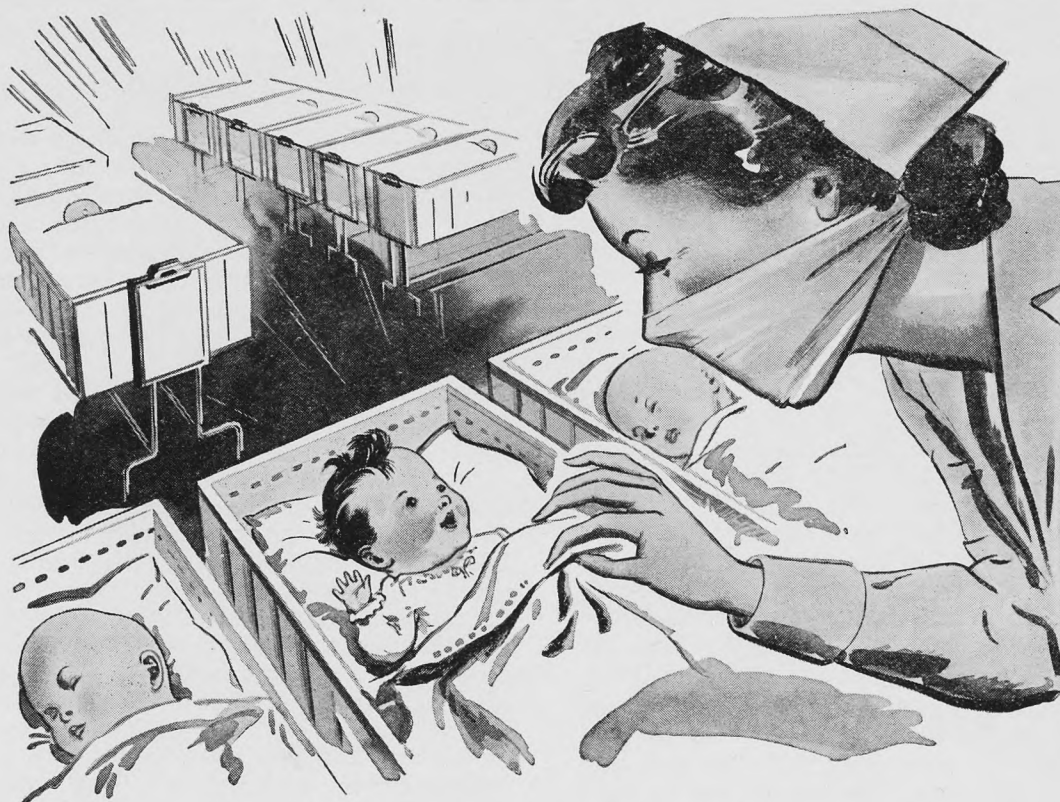
Refresher Course

Monday, Tuesday and Wednesday, April 2, 3, 4

The Post-Graduate Committee of the University of Manitoba will hold a three-day Refresher Course on April 2, 3 and 4, 1945. This course is designed primarily for medical officers in the armed services, but a limited number of civilian practitioners may be enrolled if vacancies are available. Applications should be addressed to the Secretary of the

Post-Graduate Committee, Medical College. These applications will be considered in the order in which they are received, and preference will be given to rural practitioners.

The course will deal with Recent Advances in Medicine. The fee for this course will be \$10.00.



AN OSTEOCAP BABY

".... THOSE WHOSE MOTHERS HAD BEEN GIVEN BONE MEAL HAD SUCH LONG SILKY HAIR AND SUCH LONG NAILS THAT THE PHENOMENON WAS REMARKED UPON BY THE NURSES."

(Report on Clinical Use of Bone Meal. Martin, E. M., Jour. C.M.A., Vol. 50)*.

OSTEOCAP and OSTEOTABS

Enhanced Availability of CALCIUM, PHOSPHORUS and FLUORINE in Nature's Ratio

Each unit contains 0.5 gms. select and Purified Bone Flour with vitamins A and D

Indications: Progressive dental caries, "growing pains," night terrors, allergic disturbances, slow healing fractures, dietary supplement where there is believed to be insufficient calcium or phosphorus intake.

Dose: One or two with every meal.

*Test was conducted over a period of four years

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Manitoba Medical Service

Many patients belonging to the M.M.S. fail to mention that fact to their doctor until they have received one or two bills from him. On the other hand, many doctors fail to appreciate the large numbers who now belong to the service, many of them patients of several years standing. The result is that doctors are penalized for sending in late accounts; of course, the doctor's explanation is at once accepted and the penalty cancelled, but all this entails extra administrative work.

There is only one solution; ask or have your nurse ask the patient if he belongs to the Manitoba Medical Service, etc., and the white report slip can then be prepared as to identification, and it will only take thirty seconds between patients to fill in essential medical details.

A few complaints have reached the office of the Manitoba Hospital Service Association, which is in charge of enrolment and, therefore, comes in direct contact with groups and hears complaints about the service. The most serious of these is that some patients have been left with the impression that the doctor is not interested in the work, that he is not going to receive very much remuneration for his services, and that members of the Manitoba Medical Service will not receive as willing or as favorable service from him as do his private patients.

We have always known that special consideration has to be shown for the mental outlook of sick people, and that doctors are often unjustly blamed for neglect or unskilful treatment; but if the public gets the impression that a lower standard of service is being provided to Manitoba Medical Service than private patients, the results will be most harmful. One disgruntled patient airing a grievance can bring more discredit on a plan like this than ten satisfied members can neutralize.

To take up again the question of reports, many doctors or their nurses send in reports which are a model; but too many give so little information that telephone enquiries have to be made; not a few have come in with only the identification of the patient and the doctor's signature; no reference of any kind to the disease or the fee.

A great many of you fail to appreciate that a statistical record of its services given in a plan like this will be your best protection against being overridden by a government when national health insurance is introduced; the government will have estimates; we shall,

I hope, have facts. Some years ago, English doctors applied for increased pay for treatment of insured patients; the Minister of Health asked "How much service are you giving?" The doctors had to confess that they did not know, and the Minister refused to listen further to the deputation. Let that be a lesson to us.

If, as I believe, you are too busy and too tired, why not train your nurse, or have somebody else do it. Several weeks ago I offered to hold a few nurses classes in the Medical Arts Building in the mornings when nurses are reasonably free, but heard nothing more about it.

It will be a great deal of assistance if you give in a couple of words the findings of such tests as, B.M.R., E.K.G., X-ray, Blood Tests. Age, even approximate, will be useful in helping to code the diagnosis when other details are lacking. Designate definitely the important diagnosis, since only one figure in each section can be punched on the Hollerith card. Please do **not** write in the two small spaces marked I and II at the foot of the page; they are for the code numbers signifying your primary and secondary diagnosis. Other useful hints are to be found on page 24 of the January number of the Manitoba Medical Review.

One of our immediate and more difficult problems, seeing that the scale of fees cannot be paid in full for some indefinite time, is the equitable division of available funds. No one will deny that the payments for the latter months of 1944 were not equitable; if your bill was \$10, you received that amount; if it was \$15.00 you received \$9.00; there were other discrepancies. For a little while the profession will have to be patient, knowing that the Board of Trustees is dealing with the matter; an actuary has done some work on it, and certain statistical information is being obtained from other sources; at the moment a sliding scale rather than a flat percentage deduction would appear to hold out promise.

On January 31st, at the end of four months' enrolment, 4200 contracts for medical service had been issued covering a total of 9,415 persons. The net increase during the month alone amounted to 1112 participants. Extremely interesting is the distribution shown—7855 participants or 83.5% of the total have Plan B—the complete medical service.

E. S. Moorhead, Medical Director.

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IDEAL FOR TRAVELLING



You can safely recommend Pheno-Active to patients who experience constipation when travelling or on holidays. The tube of 25 tablets conveniently fits into a vest pocket or handbag.

Pheno-Active . . . the tiny bedtime laxative, restores bowel regularity in cases of mild or occasional constipation. Its principal ingredient, Phenolphthalein, is mild, non-toxic, tasteless and little absorbed. Combined with small amounts of Aloin and Ipecac, it acts on the large intestine and results in a soft formed stool. Belladonna is present in the formula to relieve any spastic condition.

DOSAGE

One or two tablets at night is usually sufficient. In more obstinate cases, one tablet after each meal; and then reduced to one morning and night.

MODES OF ISSUE

Tubes of 25, Bottles of 100. Also dispensing bottles of 500 tablets.

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WHERE QUALITY AND PRICE ARE EQUAL OR BETTER, PRESCRIBE CANADIAN PRODUCTS

Personal Notes and Social News

Dr. and Mrs. Robert M. Rutherford are happy to announce the birth of a son (Maurice Moor) on February 2nd, 1945, at Grace Hospital, Winnipeg.

Major Charles Hollenberg, R.C.A.M.C. (overseas) was listed on His Majesty the King's New Year honor list when he was made a member of the Order of the British Empire.

Major Allen Whitten McCulloch, R.C.A.M.C. (overseas), younger son of Mr. and Mrs. Hugh W. McCulloch of Souris, Man., is engaged to marry Lieut. Nursing Sister Velma Gertrude Cockerill, R.C.A.M.C., daughter of Major and Mrs. Frank Cockerill, Gunton, Man. The marriage to take place February 24th, 1945, at Saint Nicholas' Church, Taplow, England.

Major J. Robert Campbell (M.C., U.S. Army overseas) and Mrs. Campbell wish to announce the birth of a son (Robert Edward) at Clinton, Iowa, on January 30th, 1945.

Captain Fred James McLean, R.C.A.M.C. (overseas) has been promoted to the rank of acting Major.

Captain Maxwell Lerner, R.C.A.M.C. (overseas) has been awarded the Military Cross for gallantry in action, according to an announcement from the National Defence Department, Ottawa.

Dr. P. H. T. Thorlakson was elected chairman of the Western Regional group of the associated committee for medical research of the National Research Council.

Surgeon-Lieutenant and Mrs. Edgar Gee announce the birth of a daughter (Carolyn Edith) on January 30th, 1945, at Hamilton, Ont.

Dr. Eileen Mullin is now associated with the Hollenberg Clinic, Winnipeg.

Dr. and Mrs. O. Margolese's only daughter, Helen, was married on February 24th, at the family residence, 43 Kingsway, to Milton W. Lang of St. Hyacinthe, Que., son of Mr. S. Lang and the late Mrs. Lang of Bridgeport, Conn.

Dr. Dallas Medd, R.C.A.M.C., son of Dr. and Mrs. A. E. Medd of Winnipegosis, Man., was married on February 9th, to May, only daughter of Mr. and Mrs. Eric A. Isfeld of Winnipeg.

Dr. J. W. Bowden, who recently graduated from the Manitoba Medical College, has left for Regina, where he will be an associate at the Cancer Clinic, Grey Nuns' Hospital.

Colonel Ross H. Cooper, R. C. A. M. C., who recently returned from active duty overseas, paid a visit to the Medical Arts and renewed his many old acquaintances.

Dr. E. H. Whelply, formerly with the R.C.A. M.C. (overseas), has re-entered civilian practice at 586 Ingersoll St., Winnipeg.

Dr. Bernard R. Mooney has left Winnipeg to reside in Vancouver.

Squadron Leader and Mrs. R. G. Cadham are happy to announce the birth of a daughter on February 23rd, 1945, at the Winnipeg General Hospital.

Heard in the Corridor:

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IS HE M-A-R-R-I-E-D????



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Model 1936 Men

Model 1938
Women

Made of heavy canvas. Special leather-covered pad with two (2) rigid metal braces (one at each side of spine) giving ideal back support. Has two (2) adjusting straps.

Front fastening.
Front depth 7"
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Specify circumference of hips when ordering.

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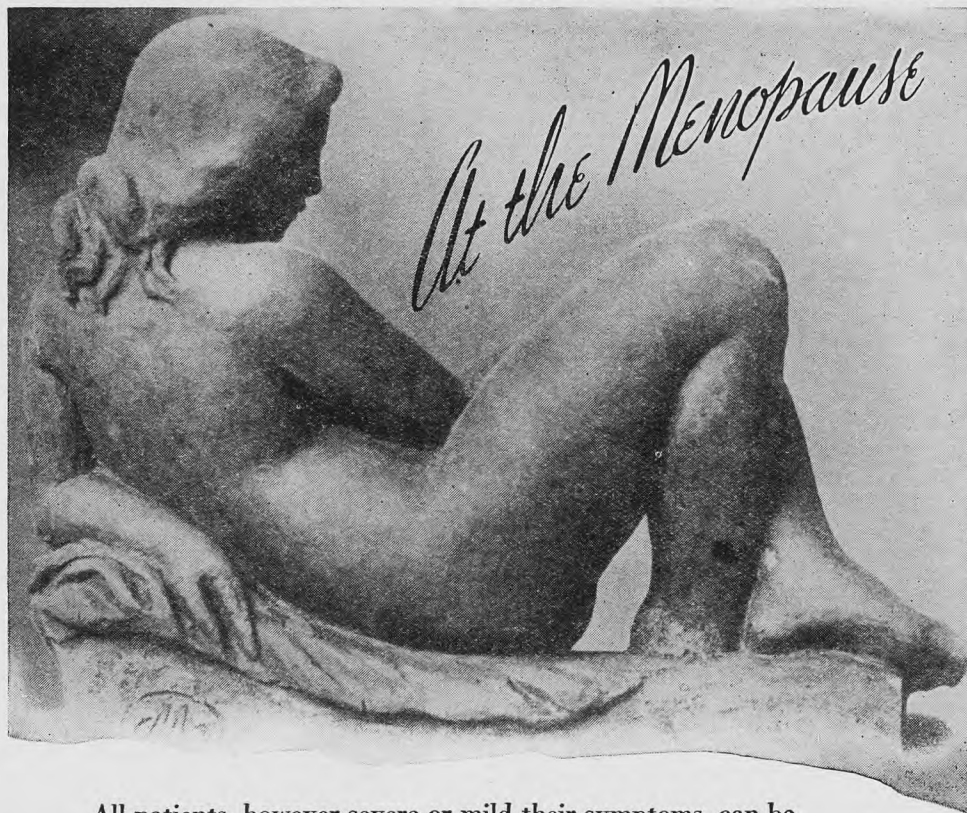
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 "Premarin" (No. 866) for the most severe symptoms; *the new Half-Strength*
 "Premarin" (No. 867) when symptoms are moderately severe;
 "Emmenin" for mild symptoms.

"PREMARIN" and "EMMENIN"

conjugated oestrogens (equine)
 Tablets No. 866; Tablets No. 867

conjugated oestrogens (placental)
 Tablets No. 701; Liquid No. 927

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 ESSENTIALLY SAFE • IMPART A FEELING OF WELL-BEING

New Available!

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CANADA



Department of Health and Public Welfare
Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1945		1944	
	Jan. 1 to Jan. 27	Dec. 4 to Dec. 31, 44	Jan. 1 to Jan. 29	Dec. 5 to Dec. 31, '43
Anterior Poliomyelitis	1	---	---	---
Chickenpox	262	243	338	380
Diphtheria	28	43	9	20
Diphtheria Carriers	7	7	4	6
Dysentery—Amoebic	---	---	---	---
Dysentery—Bacillary	---	3	---	1
Erysipelas	5	9	7	8
Encephalitis	---	---	---	1
Influenza	12	14	64	169
Measles	45	117	117	33
Measles—German	3	2	7	1
Meningococcal Meningitis	2	1	3	2
Mumps	65	38	198	232
Ophthalmia Neonatorum	---	---	---	---
Pneumonia—Lobar	2	11	25	25
Puerperal Fever	---	---	---	1
Scarlet Fever	55	87	268	216
Septic Sore Throat	---	1	2	8
Smallpox	---	---	---	---
Tetanus	---	---	---	---
Trachoma	---	---	---	---
Tuberculosis	16	95	25	62
Typhoid Fever	1	3	---	1
Typhoid Paratyphoid	---	1	---	---
Typhoid Carriers	---	---	---	---
Undulant Fever	---	---	---	1
Whooping Cough	31	32	34	54
Gonorrhoea	117	108	139	129
Syphilis	42	43	48	31

DISEASE	*726,000 Manitoba	*3,825,000 Ontario	*906,000 Saskatchewan	*2,972,300 Minnesota	*641,335 North Dakota
*Approximate Populations.					
Anterior Poliomyelitis	1	---	---	2	2
Anthrax	---	---	---	---	1
Chickenpox	262	1737	126	---	175
Diphtheria	28	7	2	40	51
Diphtheria Carriers	7	---	1	---	---
Dysentery—Bacillary	---	---	---	1	---
Dysentery—Amoebic	---	---	---	4	---
Encephalitis	---	---	---	---	---
Erysipelas	5	7	---	---	---
Influenza	12	262	---	3	16
Measles	45	292	160	29	10
Measles—German	3	58	15	---	---
Meningococcal Meningitis	2	7	---	3	4
Mumps	65	586	55	---	---
Ophthalmia Neonatorum	---	---	---	---	---
Puerperal Fever	---	---	---	---	---
Scarlet Fever	54	401	33	299	47
Septic Sore Throat	---	9	4	---	---
Smallpox	---	---	---	---	---
Trachoma	---	---	---	---	---
Tuberculosis	12	191	---	20	12
Tularemia	---	---	---	1	---
Typhoid Fever	1	---	---	---	1
Typhoid Para-Typhoid	---	---	---	1	---
Undulant Fever	---	5	---	26	1
Whooping Cough	31	413	26	145	13
Gonorrhoea	117	620	---	---	18
Syphilis	42	366	---	---	16

Deaths From Communicable Disease

December, 1944

Urban—Cancer 52, Pneumonia (other forms) 6, Tuberculosis 6, Pneumonia Lobar 5, Syphilis 3, Influenza 2, Diphtheria 1, Cerebrospinal meningitis 1. Other deaths under 1 year 15. Other deaths over 1 year 189. Stillbirths 8. Total 288.

Rural—Cancer 27, Tuberculosis 12; Pneumonia Lobar 4, Pneumonia (other forms) 3, Diphtheria 3, Influenza 2, Syphilis 2, Scarlet Fever 1, Whooping Cough 1, Hodgkin's Disease 1. Other deaths under 1 year 17. Other deaths over 1 year 139. Stillbirths 5. Total 217.

Indians—Tuberculosis 21, Whooping Cough 8, Pneumonia (other forms) 5, Influenza 4, Measles 3, Cancer 2, Puerperal septicaemia 1*, Typhoid Fever 1, Dysentery 1. Other deaths under 1 year 9. Other deaths over 1 year 8*. Stillbirths 2. Total 65**.

**Whites on Indian Reserve.

◆

Diphtheria is still too prevalent.

Scarlet Fever incidence is lower than usual but this is following a high morbidity in 1944.

Typhoid Fever—Only one case reported in this four-week period but at the time of writing (February 15th) there have been cases reported near Amaranth, cases near Poplar Point and near Headingly. One should be on guard against this disease.

Venereal Diseases are not decreasing to any marked degree. A united effort is required to control them. Otherwise the health of Manitoba as regards communicable disease is in fairly good condition.



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Vitamin D	800 Int. Units

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CAPSULES

Royal Commission Appointed to Investigate Health and Welfare of Japanese

Report of Royal Commission Appointed to Investigate the Health and Welfare of the Japanese in the Interior Settlements of British Columbia, January, 1944

Section of report dealing with Health Services and tables showing: (1) Heights and weights of Japanese children before and since evacuation; and, (2) Birth and death rates of Japanese people before and since evacuation.

Health services, which include both preventive services and a medical, dental and hospital care programme have been exceptionally well organized in all Interior Settlements, and show appreciation of the fact that one of the most important items of the welfare of any people is the care of its health.

In all Settlements visited Your Commission found complete health services provided. The methods used to obtain this end varied at the different camps, depending on their requirements and the local medical, hospital and other facilities available to provide a complete service.

At all camps full-time physicians are employed. All of these, except two, are Japanese graduates from Canadian or American universities, and are licensed to practice in British Columbia. Where local Occidental Doctors are available they are used on a part-time basis for supplying supervision of the health programme and for providing surgical and other specialist care as required.

Medical, surgical and specialist services required over and above those provided at the camps are obtained through the ordinary channels. Cases requiring special care are transferred to whatever hospital and physician necessary to secure the treatment required. Where the Japanese have assets, they are expected to pay for these extra services rendered.

Full-time dental service is available at all Settlements, using qualified Japanese dentists for this purpose. Free dental service is provided for all children and for adults unable to pay. Those Japanese who have their own resources are required to pay for services rendered.

At all Settlements the hospital or the clinic serves as the health centre for the community, and the doctors' and dentists' offices are situated at the health centre.

The services rendered at the centre are as follows:

- (1) Pre-natal care.
- (2) Pre-school child supervision.
- (3) Immunization programmes against smallpox, typhoid, diphtheria, scarlet fever.
- (4) School Medical service (complete examination).
- (5) Office consultation for sick persons.
- (6) Hospital care with medical, obstetrical and surgical service as required.

Other health services are provided from the centre, such as sanitary supervision in the camp and visiting services for persons sick in their own quarters.

In all Settlements except New Denver where local facilities are used, the Commission has established their own hospitals, staffed with registered nurses, (Japanese and Occidental), who are ably assisted by Japanese hospital aides who have received special training for this type of service.

The total number of general hospital beds provided at all camps is 155. An additional 90 beds are provided for the treatment of tuberculosis. This makes a ratio of 13.5 general hospital beds per 1,000 population, and 6 sanatorium beds per tuberculosis death. The same ratios for whites in British Columbia are 7.4 general hospital beds per 1,000 population, and 1.9 sanatorium beds per tuberculosis death. Hospital facilities are quite adequate.

The health services provided are so much superior to that available to most Canadian communities Your Commission thought it would be desirable to try and evaluate its effect, together with other welfare services provided by the B.C. Security Commission, on the Japanese people in the Interior Settlements.

In order to obtain a picture of the physical well-being of the Japanese before evacuation, 1,000 school medical record cards originally computed by the personnel of the Greater Vancouver... Metropolitan Health area were tabulated by sex and age as to height and weight. During the course of the Commission's visits to the Settlements over 1,391 children of both sexes and of various ages were weighed and measured. Certain pertinent pre-evacuation death rates amongst the Japanese were also obtained. The same death rates have been secured in respect to the Japanese in the Interior Settlements.

At the request of a Japanese Camp Committee certain aged persons were weighed, it being alleged that under their present maintenance there had been a great loss of weight. Your Commission in considering the results of the weighing can see little difference between those on maintenance and those self-supporting and as most of those weighed had some pathological condition the loss of weight cannot be attributed to insufficient nourishment.

These studies have been made by specially trained personnel secured for this purpose, and in Your Commission's opinion give an unbiased and true picture of the physical well-being of the Japanese before and since evacuation.

F.W.J.

The following tables show:

- (1) Heights and weights of Japanese children by sex and age. Before and since evacuation.
- (2) Birth and death rates of Japanese people before and since evacuation.

Average Heights and Weights of Japanese Children Before and Since Evacuation By Sex and Ages

	BEFORE EVACUATION				SINCE EVACUATION			
	Male		Female		Male		Female	
(Total examined age group 6-15 years)	(492)		(490)		(662)		(657)	
Age	Height Inches	Weight Lbs.	Height Inches	Weight Lbs.	Height Inches	Weight Lbs.	Height Inches	Weight Lbs.
6	43.36	42.20	43.17	41.11	43.72	44.37	43.07	42.19
7	45.41	45.75	45.26	45.45	45.78	47.10	45.38	45.16
8	48.99	52.43	46.98	48.32	48.00	52.83	47.54	51.59
9	49.46	55.93	49.33	55.10	49.80	59.13	49.49	56.92
10	50.67	55.59	51.39	60.24	51.65	62.96	50.02	62.17
11	52.83	67.84	53.20	67.46	53.06	68.65	54.00	69.63
12	54.96	75.23	55.59	78.08	55.07	77.32	56.16	82.80
13	58.12	87.08	57.50	85.64	58.62	91.52	58.40	89.01
14	60.01	93.53	58.55	92.34	61.40	104.32	59.50	99.18
15	62.88	117.80	59.35	92.32	63.62	116.52	60.12	105.87
	526.69	693.38	520.32	665.06	530.72	724.72	523.68	704.52
Average (10 Age Groups) 6-15	52.67	69.34	52.03	66.51	53.07	72.47	52.37	70.45
AVERAGE GAIN SINCE EVACUATION					.40	3.13	.34	3.94

Japanese Vital Statistics, British Columbia, Before and Since Evacuation

	Before 4-Year Average	Since *Year 1943
Population	8,858 (Vancouver)	11,500 (Average)
Birth Rate per 1,000 Population	23.16	21.83
Death Rate per 1,000 Population	7.31	7.13
T.B. Death Rate per 100,000 Population	155.3	121.7
Infant Mortality Rate per 1,000 Live Births	38.18	23.90
Maternal Mortality per 1,000 Live Births	2.05	0.00

*Rates for 1943 may be subject to slight variation after Vital Statistics are compiled at Bureau of Statistics, Ottawa.





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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66:1-11, July 1943.

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